IN THE

Supreme Court of the United States

OCTOBER TERM, 1979

No. 79-523

LEESONA CORPORATION, *Petitioner,*

v.

THE UNITED STATES OF AMERICA, *Respondent.*

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF CLAIMS

ALFRED W. BREINER
727 - 23rd Street, South
Arlington, Virginia 22202

Attorney for Petitioner

Of Counsel:

B. W. NORTON
333 Strawberry Field Road
Warwick, Rhode Island 02887

HARVEY E. BUMGARDNER, JR.
1230 Sixth Avenue
New York, New York 10020

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Petitioner, the plaintiff below, prays that the Court issue a writ of certiorari to review the judgment and opinion of the United States Court of Claims entered on May 16, 1979.

OPINIONS BELOW

The opinion of the trial judge on accounting is reported at 198 U.S.P.Q. 4 (Appendix A to this Petition). The opinion of the Court of Claims on accounting, sitting *en banc,* is reported at —— Ct.Cl. ——; 599 F.2d 958; 202 U.S.P.Q. 424 (Appendix B). The opinion of the trial judge on the liability phase of this case is reported at 185 U.S.P.Q. 156, affirmed with a *per curiam* opinion at 208 Ct.Cl. 871; 530 F.2d 896; 192 U.S.P.Q. 672 (Appendix C). An interlocutory opinion of the Court of Claims on the issue of attorney fees is

reported at 213 Ct.Cl. 722; 197 U.S.P.Q. 737 (Appendix D).

JURISDICTION

The judgment of the Court of Claims was dated and entered on May 16, 1979. Each of the petitioner's and respondent's timely petitions for rehearing was denied on June 29, 1979; and this Petition for certiorari was filed within ninety days of that date. Petitioner invokes the jurisdiction of this Court under 28 U.S.C. § 1255(1).

QUESTIONS PRESENTED

I. As to money damages for the infringement of a United States patent, is the United States any less liable to a patent owner than a private citizen would be to that patent owner under the Patent Laws, Title 35, when the United States infringes a patent *and also gives* authorization and consent to a private citizen to infringe that patent?

II. Is the United States, as held by the Court of Claims, exempt from the provisions of Article I, Section 8, of the Constitution, and the Patent Laws, Title 35, Section 154, granting a patentee an exclusive right under the patented invention in apparent conflict with the holding of this Court in *James* v. *Campbell,* 104 U.S. 356 (1881), where this Court stated that to exempt the United States from a patentee's exclusivity would preclude the patentee's right of exclusivity?

III. Can the United States, under its power of eminent domain, destroy a patentee's right of exclusivity in the patentee's patented invention by consenting to and authorizing the infringement of the patentee's rights by another private citizen, and as the indemnifier, pay as damages to the patentee less than the mone-

tary remedies available to the patentee against the private citizen in an action against the private citizen under the Patent Laws, Title 35, Sections 271; 281; 283-285, contrary to the fifth amendment to the Constitution?

IV. Is the holding of the Court of Claims that the United States, under the provisions of 28 U.S.C. § 1498, has a legal right to take a compulsory license to infringe any United States patent and authorize any private citizen to infringe any United States patent at any time for at most a reasonable royalty in conflict with the decisions of this Court in *William Cramp & Sons Ship & Engine Building Co.* v. *International Curtis Marine Turbine Co. et al,* 246 U.S. 28 (1918); and *Richmond Screw Anchor Company* v. *United States,* 275 U.S. 331 (1928)?

V. Are the Patent Laws, Title 35, Sections 154; 281; 284 and 285, which grant a patentee exclusivity under his patented invention in consideration for a full disclosure of his invention and which grant a remedy by civil action with a full measure of damages for unlawful use by another of the patented invention; and 28 U.S.C. § 1498, as interpreted by the Court of Claims to permit indiscriminate use by the United States and indiscriminate use by contractors of the United States through authorization and consent of the United States for at most a reasonable royalty, in conflict?

VI. Does the holding of the Court of Claims that the United States can take a compulsory license, including the right to authorize and consent to infringement of a patentee's right by another private citizen, violate treaties entered into by the United States government with foreign governments to protect United States and foreign inventors and those taking title from those inventors?

CONSTITUTIONAL PROVISIONS, STATUTES AND RULES INVOLVED

The questions presented by this Petition require interpretation of the Constitution of the United States, Article I, Section 8, and the fifth amendment to the Constitution; the Patent Laws, Title 35, Sections 154, 271, 281, 283-285; 28 U.S.C. § 1498(a); and the International Convention on Patents as amended at Stockholm on July 14, 1967, Articles 2 and 5 A., all of which are set forth at length in Appendix E to this Petition.

STATEMENT OF THE CASE

Overview

Petitioner, Leesona, pursuant to Title 28, Section 1498(a), on April 20, 1970 filed suit in the Court of Claims to recover from the United States for the infringing use by the United States and for the authorization and consent by the United States to a private citizen, Eagle-Picher, Inc., to infringe United States patents owned by Leesona. The Leesona patents are directed to metal/air batteries developed and militarized by Leesona.

The Court of Claims adopted *per curiam* the opinion and findings of fact of Trial Judge Cooper on the liability phase [1] of the case holding certain of the Leesona patents valid and infringed (Appendix C hereof).

Trial Judge Browne on the accounting or damages phase of the case held that this was a first of its kind, exceptional case and held that in determining reasonable and entire compensation under 28 U.S.C. § 1498,

[1] Cases before the Court of Claims under 28 U.S.C. § 1498 are normally bifurcated, first deciding liability of the United States government and, after establishing liability, determining damages.

i.e., damages, the provisions of the Patent Laws, Title 35, applied to the United States government. The trial judge made an award of damages to Leesona in excess of $3.5 million including increased damages under 35 U.S.C. § 284 and attorney fees of $100,000 under 35 U.S.C. § 285 (Appendix A hereof).

The United States excepted to the trial judge's findings and the Court of Claims on review reversed the trial judge and held that the provisions of the Patent Laws, Title 35, do not apply in determining reasonable and entire compensation under 28 U.S.C. § 1498, and that the correct measure of reasonable and entire compensation is a reasonable royalty only (Appendix B hereof).

Petitioner requests a review of the holding of the Court of Claims on an issue critical to all United States patentees—United States citizens and foreigners alike. The determination of a patentee's rights with respect to the United States for its use of a patented invention, and against a private citizen infringing under the cloak of the authorization and consent of the United States has not been treated by this Court for fifty years and is of critical concern to all patent holders.

Special Findings Of The Trial Judge On Accounting

Trial Judge Browne, in awarding damages, found that Leesona, an established and highly reputable manufacturer of textile machinery, as a part of a program of diversification, acquired the Leesona-Moos Laboratories. Leesona developed with its own funds a unique mechanically rechargeable metal/air battery and obtained patents on the development. Leesona with its battery set out to solve the problems of the then-existing

batteries (BB-451/U) used by the military (Marine Corps) in powering certain military radios. Leesona, under contract with the United States government, initially produced twenty-two batteries for a contract price to the United States government of $300,000. In addition to the $300,000, Leesona expended at least $100,000 of its own money in producing the twenty-two batteries. The Leesona-produced batteries were tested by the Marine Corps (the Pendleton tests) and as a result of the superior performance demonstrated at the Pendleton tests the Marine Corps concluded that it would replace all of its BB-451/U rechargeable batteries with the Leesona battery, designated by the Marine Corps as the BB-626/U. It was estimated by the Marine Corps that its annual procurement of the BB-626/U would be in excess of $25 to $30 million. The Army requirements for a similar-type battery would be substantially greater.

In anticipation of receiving government contracts for large quantities of its BB-626/U batteries, Leesona's management made a decision to commit $3 million of its own funds to establish a full-time production and manufacturing facility for its battery. Concurrently with this decision Leesona decided to concentrate on the military market and forego exploitation of the non-military or commercial potential of its unique battery.

The United States, through the Marine Corps, initially offered a sole source contract to Leesona for the production of certain BB-626/U batteries and components. The letter contract was accepted and signed by Leesona, and was promptly returned to the Marine Corps Supply Activity in Philadelphia, Pennsylvania. The Marine Corps, however, did not ratify the letter

contract, but instead informed Leesona that a formal contract would not be executed since a decision had been made to place the item for procurement under competitive bid procedures in lieu of sole source procurement.

The trial judge found that two battery manufacturers who had not previously built a BB-626/U battery or any other successful mechanically rechargeable or reconstructable battery learned of the issuance of the letter contract for a sole source procurement and asserted that they had the capability of manufacturing the item and wanted to have a chance to bid on the procurement.

The trial judge found that the Marine Corps was aware of Leesona's patents and was aware that Leesona would not license the manufacture of its metal/air batteries in the United States. Leesona wanted to maintain its exclusive manufacturing rights within the United States as a means or springboard into a new field.

The Marine Corps sent out requests for bids in the manner prescribed for a competitive bid procurement using in its bid package drawings and specifications obtained from Leesona. Pursuant to the competitive bid procedure, Contract No. MOO150-70-C-0113 (the Eagle-Picher contract) was awarded to Eagle-Picher, Inc., the lowest of five bidders, on November 6, 1969.

The trial judge concluded, based on the evidence at trial, that the entire conduct of the Marine Corps in its dealings with Leesona and in the United States' taking of the fruits of Leesona's efforts in the manner done, and the willful infringement of the Leesona patents, was despicable, and that the government's despicable conduct made this an exceptional case.

The trial judge acknowledged that the measure of damages against the government was based on 28 U.S.C. § 1498, which in part states—

> "Whenever an invention described in and covered by a patent of the United States is used or manufactured by or for the United States *without license* of the owner thereof *or lawful right* to use or manufacture the same, the owner's remedy shall be by action against the United States in the Court of Claims for the recovery of his *reasonable and entire compensation* for such use and manufacture." (Emphasis added)

The trial judge then expressly held that all of the legal remedies provided in an action under the Patent Laws, Title 35, are applicable in determining reasonable and entire compensation in actions in the Court of Claims under 28 U.S.C. § 1498(a), and that the Court of Claims can grant *entire* relief to a damaged patentee within the provisions of the Patent Laws in the form of a money judgment.

In response to contentions by the United States that a patentee at best is entitled to a reasonable royalty as reasonable and entire compensation, the trial judge stated that it would be—

> "absurd to conclude that the United States is less liable to a patent owner than a private citizen when a patent is infringed." [Opinion, App. A, p. 14a]

Based on the exceptional nature of the case as determined by the substantial trial record and subsequent post-trial activity, the trial judge awarded damages to Leesona, including delay compensation, increased damages and attorney fees, of $3,534,753.52. Additional delay compensation at the rate of $470.51 per day for

each day from January 1, 1978 to date of payment of the judgment was assessed.

The Decision Of The Court Of Claims Sitting *en banc*

The full Court of Claims, sitting *en banc,* substantially rejected the determination of damages made by the trial judge. The court substituted its own determination of damages for the determinations of the trial judge and reduced the trial judge's award as accrued on May 16, 1979 from $3,770,479.03 to $445,902.79, i.e., to less than 12 percent of the trial judge's award or a decrease of $3,324,576.24!

The court made this drastic reduction in the damages awarded by the trial judge to Leesona although it substantially agreed with the critical findings of fact made by the trial judge including that Leesona in its patents had made a significant technical contribution; had placed special value on its patents, and had maintained its exclusivity to manufacture within the United States; and although it separately found that Leesona's patents *had* a special value to Leesona and that Leesona *had* suffered great damage through the government's taking of its exclusivity. Indeed, the court in its opinion on no less than sixteen occasions recognized and commented on the unique Leesona battery; the unique position of Leesona and of the unique value of the Leesona patents to Leesona. The court on nine occasions recognized that Leesona had maintained its exclusivity to manufacture in the United States, and/or that its patents were to be used as a springboard into a new venture—*the classic function and value of a patent* (see Appendix F).

The Court of Claims' rejection of the determination of damages by the trial judge is based on the court's conclusion that—

"The theory for recovery against the government for patent infringement is not analogous to that in litigation between private parties. When the government has infringed, it is deemed to have 'taken' the patent license under an eminent domain theory, and compensation is the just compensation required by the fifth amendment." [Opinion, App. B, p. 52a]

The Court of Claims for this conclusion relied on this Court's decision in *Crozier* v. *Krupp,* 224 U.S. 290; and ignored ***William Cramp & Sons Ship & Engine Building Co.*** v. ***International Curtis Marine Turbine Co. et al,*** 246 U.S. 28.

The court further concluded that 28 U.S.C. § 1498—

"does not provide compensation for the loss of exclusivity, only for the manufacture or use of an item by or for the government." [Opinion, App. B, p. 83a]

and that—

"A complete congruence between § 1498 and Title 35 would grant plaintiff a recovery in excess of the just compensation required by the fifth amendment, ..." [Opinion, App. B, p. 61a]

The Court of Claims further noted—

"The trial judge justified a doubling of damages here due to 'the despicable conduct of defendant * * * [indicating] utmost bad faith on the part of the Government.' To whatever extent the trial judge may have based his conclusion of bad faith on the government's knowing or willful infringement of the patents, the answer is, as we have noted, that the government had the legal right to take the patents." [Opinion, App. B, p. 63a]

and that—

"The trial judge seemed to have difficulty with the idea that the law accorded the United States rights not conferred on private parties." [Opinion, App. B, p. 64a]

REASONS FOR GRANTING THE WRIT

Summary Of Argument

The trial judge in a well-reasoned and progressive opinion, fully documented and supported by the trial record, for the first time in over fifty years and possibly the first time ever within the Court of Claims dealt fully with the meaning of reasonable and entire compensation to a patentee under 28 U.S.C. § 1498.

—The trial judge recognized the unique nature of patent property as derived from the Constitution and that the only true value of patent property is the patentee's exclusivity.

—The trial judge recognized that the United States not only infringed Leesona's patents by its unlawful use of items or articles covered by the patents, but that it took the positive action of giving authorization and consent to Eagle-Picher to infringe Leesona's patents, which action destroyed Leesona's exclusivity, to Leesona's very substantial damage.

—The trial judge recognized that the government's authorization and consent to any private citizen to knowingly and willfully infringe a United States patent takes from the patentee vested property rights against the infringing private citizen conferred by the Constitution, Article I, Section 8; and the Patent Laws, Title 35, Sections 154, 281, 283-285.

—The trial judge, fully aware of the entire background and the facts of this case, recognized the deliberate and willful nature of the infringement by the United States of Leesona's patents and its despicable conduct in dealing with Leesona and found this to be a first of its kind, exceptional case.

Because it was an exceptional case, the trial judge awarded increased damages under the Patent Laws, Title 35, Section 284, and included an award of attorney fees, available in an exceptional case under the Patent Laws, Title 35, Section 285. The determinations of the trial judge are fully consistent with this Court's holding in *Cramp & Sons* v. *Curtis Turbine Co.*, supra; *Richmond Screw Anchor Company* v. *United States,* 275 U.S. 331; and *Waite* v. *United States,* 282 U.S. 508.

The Court of Claims, sitting *en banc,* ignored previous dictates of this Court in *Cramp,* supra; *Richmond Screw,* supra, and *Waite,* supra; and held that *at most* a patentee is entitled to a *reasonable royalty* for defendant's taking of a compulsory license which included authorization of a private citizen to infringe. The Court of Claims in its decision totally ignored the undisputed fact that the United States, in giving authorization and consent to another private citizen to infringe the Leesona patents, took from Leesona a cause of action under the Patent Laws, Title 35, Sections 281, 283-285, against that private citizen for patent infringement.

The Court of Claims in its opinion, while recognizing the value of exclusivity to a patentee, and the meaning of this exclusivity as established in the Constitution and in the Patent Laws, Title 35, Section 154, flatly stated that loss of exclusivity could not be a factor in determining damages.

It is now the law of the land, based on the decision of the Court of Claims, sitting *en banc,* that the United States can indiscriminately infringe any United States patent, irrespective of treaty rights, and can give authorization and consent to any private citizen to infringe a patentee's rights which can lead to the destruction of a patentee's exclusivity and pay to the patentee after the very substantial expense of litigation against the United States at most a reasonable royalty —the minimum award available under the Patent Laws, Title 35, Section 284. Attorney fees, no matter how gross and despicable the conduct of the United States, and how exceptional the case, are not recoverable in contradistinction to the Patent Laws, Title 35, Section 285.

This Court has not considered the meaning of 28 U.S.C. § 1498 since *Richmond Screw,* supra, 1928; and *Waite,* supra, 1931. Both of these cases, in accord with *Cramp,* supra, support the holding of the trial judge. The decisions of this Court were ignored or glossed over by the Court of Claims in stating what unfortunately is the law of the land unless reviewed by this Court.

As a matter of public policy, in order to establish the firm principles of United States patent law as to a patentee's right to exclusivity as established by the Constitution, it is essential that this Court review the decision of the Court of Claims.

I. The Court Of Claims In Holding That The United States Can Indiscriminately Take A Compulsory License Under A Patent; Is Less Liable Than A Private Citizen When Infringing A Patent And Giving Authorization And Consent For A Private Citizen To Infringe; That 28 U.S.C. § 1498 Cannot Compensate For A Patentee's Loss Of Exclusivity, And That 28 U.S.C. § 1498 Provides Less Than The Patent Laws, Title 35, Renders 28 U.S.C. § 1498 Unconstitutional In Violation Of Article I, Section 8, And The Fifth Amendment Of The Constitution.

The Relevant Decisions Of This Court

> "The Constitution gives to Congress power 'to promote the progress of science and useful arts by securing for limited times to authors and inventors *the exclusive right* to their respective writings and discoveries,' . . . ." (Emphasis added)

James v. *Campbell,* 104 U.S. 356 (1881), at 358. This exclusivity applies to the United States as well as to private citizens since exclusivity—

> "could not be effected if the government had a reserved right to publish such writings or to use such inventions without the consent of the owner."

James v. *Campbell,* supra, at page 358. This grant of exclusivity, the only positive attribute of a patent, is the *consideration* for the patentee's full disclosure to the public of his invention. Without this grant of exclusivity there would be no consideration for the disclosure.

This Court has also long recognized that the rights—

> "secured under the grant of letters patent by the United States were property and protected by the guarantees of the Constitution and not subject therefore to be appropriated *even for public use* without adequate compensation." (Emphasis added)

Cramp & Sons v. *Curtis Turbine Co.,* supra, at pages 39-40. This Court, in *Cramp,* was reviewing the forerunner to 28 U.S.C. § 1498 as it appears today which was passed by the Congress in 1910 (the 1910 Act). This Court recognized that before the passage of the 1910 Act there was no clear or uniform mode available to a patentee for recovery of compensation for the unauthorized use by the United States of a patentee's invention. In *Cramp,* faced with the contention of the United States that an injunction was no longer available to a patentee for infringement by a government contractor in view of the 1910 Act, this Court held that the only purpose of the 1910 Act was to provide a uniform mode to patentees for obtaining compensation for the government's tortious use, i.e., without license, of a patent. The Court expressly held that under the 1910 Act a patentee *retained* all of its rights conferred by the Patent Laws against an infringing contractor of the United States, including injunctive relief. This right against the infringing contractor was property, conferred by the Constitution, and could not be taken without returning equal value.

At the time of the *Cramp* decision in 1918, therefore, this Court has made it clear that *a patentee had a right against the United States with a means provided for recovery for the United States' unauthorized use of his invention, and, additionally, had separate and distinct rights, as conferred by the Patent Laws derived from the Constitution, against an infringing contractor of the United States.*

The 1918 amendment to the 1910 Act, presently 28 U.S.C. § 1498, added to the "reasonable compensation" available to a patentee under the 1910 Act for the United States' tortious use, "entire" compensation.

The amendment of 1918, in turn, took from a patentee its vested right against an infringing (tortious) private citizen under contract to the United States, including the patentee's right of injunctive relief against the private citizen. The government took, therefore, a property right conferred by the Constitution and under the Patent Laws.

This Court in *Richmond Screw Anchor Company* v. *United States*, supra,[2] in interpreting the 1918 amendment, at pages 343-344 stated—

[2] The facts of *Richmond Screw* are as follows: A patent issued to Lenke prior to 1918 was assigned on September 29, 1920 to Thomas E. Chappell, who in turn on March 7, 1921 assigned the patent to Richmond Screw. Richmond Screw brought suit pursuant to 28 U.S.C. § 1498(a), as amended in 1918, against the United States for infringement of the Lenke patent. The Court of Claims ultimately held that the suit by Richmond Screw was barred by the Anti-Assignment Act, Rev. Stat., Section 3477, basing its decision on this Court's holding in *Brothers* v. *United States*, 250 U.S. 88. In *Brothers* the Supreme Court held that there could be no assignment to Brothers of any unliquidated claim against the government prior to the time Brothers became owner of a patent, noting Rev. Stat., Section 3477. The *Brothers* case involved the 1910 Act which authorized an action against the United States to recover reasonable compensation for the unauthorized use by the United States of a patent. However, under the 1910 Act, the patentee retained its right against a private citizen making or selling to the United States.

This Court on review concluded that Richmond Screw was barred from damages which occurred prior to the Act of 1918; the rationale being that prior to July 1, 1918 and the 1918 amendment to 28 U.S.C. § 1498(a), the patentee had a cause of action against the United States to recover reasonable compensation for use by the United States, and also a cause of action against the contractors of the United States for manufacture and sale. The prohibition against the assignment of unliquidated claims applied to the suit against the government, but obviously for infringement which occurred before July 1918 Richmond Screw retained its cause of action against the infringing contractor.

This Court further concluded that damages which accrued subsequent to July 1, 1918 caused by the infringing manufacturer and seller were not barred by Revised Statute, Section 3477, since to bar such damages in view of the 1918 amendment to 28 U.S.C. § 1498(a) which took a patentee's claim against a private citizen for infringement would take from the patentee and his assignee the value of the property right expressly provided by Article I, Section 8, and by the fifth amendment to the Constitution.

> "The purpose of the amendment was to relieve the contractor entirely from liability of every kind for the infringement of patents in manufacturing anything for the government, and to limit the owner of the patent and his assigns and all claiming through or under him to suit against the United States in the Court of Claims for the recovery of his reasonable and entire compensation for such use and manufacture. The word 'entire' emphasizes the exclusive *and comprehensive* character of the remedy provided. As the Solicitor General says in his brief with respect to the act, *it is more than a waiver of immunity and effects an assumption of liability by the government.*" (Emphasis added)

Thereafter, this Court, continuing to refer to the amendment of 1918, at page 345, stated—

> "If now section 3477 applies, and these assignments are rendered void, the effect of the act of 1918 is to take away from the assignee and present owner, *not only the cause of action against the government, but also to deprive it of the cause of action against the infringing contractor for injury by his infringement*. The intention and purpose of Congress in the act of 1918 was to stimulate contractors to furnish what was needed for the war, without fear of becoming liable themselves for infringements to inventors or the owners or assignees of patents. ... *To accomplish this governmental*

purpose, Congress exercised the power to take away the right of the owner of the patent to recover from the contractor for infringements. This is not a case of a mere declared immunity of the government from liability for its own torts. It is an attempt to take away from a private citizen his lawful claim for damage to his property by another private person, which but for this act he would have against the private wrongdoer. This result, if section 3477, Rev. Stat., applies and avoids the assignment, would seem to raise a serious question as to the constitutionality of the act of 1918 under the Fifth Amendment to the Federal Constitution. *We must presume that Congress in the passage of the act of 1918 intended to secure to the owner of the patent the exact equivalent of what it was taking away from him."* (Emphasis added)

Accordingly, this Court in 1928 made it clear that the United States government's unauthorized use of a patent, including under the 1910 Act, rests in tort. By the 1918 amendment to the 1910 Act the Congress took from the patentee, under the eminent domain power of the United States, *the right of the patentee for his lawful claim for damage to his patent property by the infringement by another private person,* i.e., the contractor to the government, *also a tort*. The taking under or through the 1918 amendment was not the mere taking of a "license" for the government's use, it was for the contractor's tortious use as well. This Court, therefore, presumed that Congress intended to provide the owner of the patent the exact equivalent of what was taken away from him, i.e., the damages sustainable for the contractor's tortious act. In interpreting 28 U.S.C. § 1498, this Court stated—

"It is our duty in the interpretation of federal statutes to reach a conclusion which will avoid

serious doubt of their constitutionality. . . . This is in accord with general rules of interpretation, as shown in these authorities, and reconciles the section 3477, Revised Statutes, and the act of 1918, if we hold, as we do, that section 3477 does not apply to the assignment of a claim against the United States which *is created by the act of 1918, in so far as the act deprives the owner of the patent of a remedy against the infringing private contractor for infringements thereof and makes the government indemnitor for its manufacturer or contractor in his infringements."* (Emphasis added) [*Richmond Screw,* supra, at page 346]

This Court, therefore, in 1928 made it clear that a patentee's rights against the United States after the amendment of 1918 to the Act of 1910 were twofold. It included a right to compensation for the government's tortious (unauthorized) use of his patent and, in addition, a right against the United States equal to the right, taken from him by the United States, for damages from a private citizen (the government's contractor) for the private citizen's tortious acts. The "just compensation" for the taking of such right must be measured by the damages sustained to the patentee by the contractor's tortious act and must be measured by damages available under the Patent Laws against a private party.[3]

[3] The only other decision of this Court found by petitioner directly treating the meaning of the term "entire" as it appears in 28 U.S.C. § 1498 is *Waite* v. *United States,* 282 U.S. 508 (1931). In reversing a holding of the Court of Claims that interest could form no part of just compensation, this Court stated—

"The statute grants 'recovery of his reasonable and entire compensation for such use.' We are of opinion that interest should be allowed in order to make the compensation 'entire.' In addition to the purpose of the word adverted to in Richmond Screw Anchor Co. v. United States, 275 U.S. 331, 343, 48 S.Ct. 194, 72 L.Ed. 303, we cannot doubt that it was in-

The Decision Of The Court Of Claims

The Court of Claims in its May 16, 1979 decision asserting that the trial judge erred in his conclusion that the remedies of Title 35 are embraced within the term "entire" compensation of 28 U.S.C. § 1498 ignored the holdings of this Court in *Cramp,* supra, and *Richmond Screw,* supra. Rather than looking to the clear holdings of this Court in *Cramp* and *Richmond Screw,* the Court of Claims cited this Court's decision in *Crozier* v. *Krupp,* supra, decided in 1912, six years before *Cramp* and the 1918 amendment to the 1910 Act, and 16 years before *Richmond Screw,* as support for its view that the 1910 Act is based on the eminent domain power of the United States; that an injunction against infringement by a government contractor was no longer available as a result of the 1910 Act; and that just compensation under the 1910 Act can only, even in an exceptional case, provide for reasonable compensation or a reasonable royalty for use of a patented item by or for the government, and for granting authorization and consent to a private party to infringe.

The Court of Claims did not look to the discussion and interpretation of *Crozier* by this Court in *Cramp,* supra. In *Cramp,* after holding that the 1910 Act was to enlarge the rights of a patentee by providing a uniform mode to patentees in obtaining compensation for the government's unauthorized use of a patent, in specifically referring to *Crozier* v. *Krupp,* supra, at page 45, this Court stated—

tended to accomplish complete justice as between the plaintiff and the United States."

Waite, as each of the other decisions of this Court, supports the award of damages made by the trial judge.

"But the use of the word 'license' affords no room for holding that it was decided that the statute provided for the appropriation by anticipation and automatically of a license to the United States to use the rights of all patentees as to every patent. And clearer yet is it that the use of the word 'license' affords no ground for the proposition that the statute invested every person contracting with the United States for the furnishing of material or supplies or for doing works of construction with public powers and transferred to them the assumed license to violate patent rights to the end that they might be relieved of the obligations of their contracts and entail upon the United States unenumerated and undetermined responsibility upon the assumption that the United States would be ultimately liable for the patent rights which the contractors might elect to take. *Through abundance of precaution, however, we say that if any support for such contentions be susceptible of being deduced from the use of the word 'license' in the passage referred to, then the word must be and it is limited, as pointed out by the context of the opinion and by what we have said in this case, to the nature and character of use which was contemplated by the statute and which is consonant with the execution of its limited though beneficient purpose and not destructive of the same."* (Emphasis added) [*Cramp,* supra, at 45]

The limited, though beneficient purpose was, as above stated, to provide all patentees with a uniform mode of recovery for the government's infringing use.

Accordingly, the *Crozier* case as interpreted by this Court in *Cramp* cannot support the Court of Claims' view that an injunction against the infringer was no longer available after the Act of 1910—an injunction was approved six years later in *Cramp*—or that "reasonable and entire" compensation of the 1918 statute

cannot include more than a reasonable royalty where before the 1918 amendment to the 1910 Act a patentee was entitled to a reasonable royalty for the United States' tortious use only and by the 1918 amendment the United States additionally took a vested property right, i.e., a right under the Patent Laws for infringement by another private party.

The Court of Claims asserted that the legislative history of the amendment of 1918 to the 1910 Act supports the government's view that "entire" added by the 1918 amendment was meant to underscore the exclusivity of the remedy of suits in the Court of Claims, *reversing in effect the decision of this Court in Cramp.* This assertion is inconsistent with the arguments of the United States before this Court in *Richmond Screw,* supra. As stated in this Court's opinion in *Richmond Screw,* the United States acknowledged that the 1918 amendment was more than a waiver of sovereign immunity and was an assumption of liability by the government for the tortious acts of its contractor. The acknowledgment by the United States before this Court is consistent with the letter of the Acting Secretary of the Navy requesting the amendment as quoted in part in *Richmond Screw* and at length in Appendix G hereof. The acknowledgment by the United States is also consistent with the arguments of the United States before this Court in *Richmond Screw* as follows:

> "So far as § 3477 is concerned, there is no reason to distinguish as to the assignability of unliquidated claims against the United States between those arising through infringement by the United States and those *based on the assumption of liability by the United States for infringement by others.*" (Emphasis added) [275 U.S. 331, at 335]

Note also the argument made to this Court on behalf of *Richmond Screw* as follows:

> "To construe the Act of 1918 as relieving the contractors from all liability to the then owner of the patent or to his assignee, and substituting therefor a liability of the United States to the then owner of the patent only and (under Rev. Stats. § 3477) not to his assignee, *would appear to be taking private property for public use without due process of law or just compensation,* and certainly would not give the owner of the patent an additional remedy, as the Act of 1918 purports to do, but a substantially curtailed remedy. It is certainly not clear that the Act of 1918 intended this curtailment of remedy. * * *
>
> "While, in so far as concerns the contractors' infringing acts, the suit is, by virtue of the Act of 1918, one against the United States, the claim was not against it, but against the contractors. *The Act of 1918 changed the defendant and the forum, but did not change the nature or the incidents of the claim.*
>
> "The history of the Act of 1918 shows the legislative intent to relieve the contractor from all liability and from all apprehension of liability, *by substituting the liability of the United States.*" (Emphasis added) [275 U.S. 331, at 333]

From the argument before the Court, it is clear that in December of 1927, the time of the argument before this Court in *Richmond Screw,* everyone concerned was aware that the United States had *assumed liability* for the infringement of its contractors. The measure of the assumed liability could only be the rights taken by the defendant from plaintiff, i.e., *damages for the tortious act of the contractor's infringement.*

The government's view that the meaning of "entire" in the 1918 amendment underscores the exclusivity of the remedy only is in direct conflict with this Court's statement in *Richmond Screw* at page 343 that—

> "The word 'entire' emphasizes the exclusive *and comprehensive* character of the remedy provided." (Emphasis added)

and this Court's view in ***Waite*** v. ***United States,*** supra, stating that "entire" was intended to accomplish ***complete justice*** as between the patentee and the United States.

The Court of Claims dismissed the holding of this Court in ***Richmond Screw*** by referring to the "troublesome retroactive changes" facing the Supreme Court in ***Richmond Screw.***[4] It is submitted that there is no

[4] Decisions of lower courts which give the words of this Court in *Richmond Screw* broad and, it is submitted, the proper construction, are: ***Pierce*** v. ***Submarine Signal Co.,*** 25 F.Supp. 862, District Court, District of Massachusetts (1939), the court stating—

> "While it may have deprived the plaintiff of a right previously given to bring suit against the manufacturer in the District Courts, nevertheless, when it withdrew such right, *it provided an equal* right in the form of an action against the United States in the Court of Claims for the recovery of his reasonable and entire compensation for such use and manufacture. There has been no taking of the plaintiff's property, either without due process of law, or without adequate compensation. *It is presumed that Congress in passing this statute intended to give the owner the equivalent of what it took away.* Richmond Screw Anchor Co. v. United States, 275 U.S. 331, 48 S. Ct. 194, 72 L.Ed. 303." (Emphasis added) [25 F.Supp. 862, at 863]

Western Electric Co. v. ***Hammond,*** 135 F.2d 283, at 285, Circuit Court of Appeals, First Circuit (1943), the court stating—

> "As bearing both on the question of jurisdiction and on the propriety of its exercise in the situation here disclosed, the Act of July 1, 1918, 35 U.S.C.A. § 68, needs to be considered. This act disables Hammond from suing Western Electric either for monetary damages or for an injunction on account of the alleged infringement. Broome v. Hardie-Tynes Mfg. Co., 5 Cir., 1937, 92 F.2d 886. Its purpose and legislative history are set forth in Richmond Screw Anchor Co. v. United States 1928, 275 U.S. 331, 48 S.Ct. 194, 72 L.Ed. 303. In order that the United States may not be delayed in obtaining needed materials and equipment through the reluctance of manufacturers to take government contracts which might involve them in expensive litigation with patentees, the Act, in such cases, *confers immunity upon the manufacturer and gives the patentee an exclusive remedy in the Court of Claims against the United States, whereby the patentee may recover full compensation for any proven patent infringement.*" (Emphasis added)

The patents involved in the noted cases were not in existence prior to the Act of July 1918 and, accordingly, the courts were not dealing with "troublesome retroactive changes."

basis for the court's distinction and refusal to accept the holding of this Court as expressed in ***Richmond Screw.*** The "retroactive changes" were not argued by either of the parties in ***Richmond Screw.*** The rights of a patentee are based on the Patent Laws as derived from the Constitution. There have been no changes in the substantive patent laws as they relate to a patentee's rights vis-a-vis the government before or after the Act of 1918.

The Court of Claims also asserted that—

> "The trial judge progressed from the conclusion that reasonable and entire compensation meant that the United States was assuming liability for more than the fifth amendment's mandated just compensation, to the view that reasonable and entire compensation included more than a reasonable royalty, ..." [Opinion, App. B, p. 60a]

The trial judge did not hold that petitioner under "reasonable and entire compensation" was entitled to more than "just compensation." The trial judge held, however, that just compensation in this exceptional case

was more than a reasonable royalty. At no time has petitioner asserted that it was entitled to more than just compensation, and still does not. However, petitioner maintained, and the trial judge found, that "just compensation" as mandated by the fifth amendment includes damages inflicted by the "taking" in order to place Leesona in as good a pecuniary position as it had been in before its property had been taken, i.e., damages for the willful taking of its exclusive right under its patents. *Seaboard Air Line Railway Company et al* v. *United States,* 261 U.S. 299.

Contrary to the implications of the Court of Claims, under 28 U.S.C. § 1498 there can be no concern with regard to the sovereign's consent to be sued, or a waiver of the sovereign's immunity. This Court clearly held in *Richmond Screw* that the government had done more than waive its sovereign immunity against suit; it assumed liability for the actions of its infringing contractors.

The trial judge was fully correct in holding, based on this Court's interpretation of 28 U.S.C. § 1498 in *Cramp,* supra; *Richmond Screw,* supra; and *Waite,* supra, that reasonable and entire compensation included all of the provisions of Title 35. Indeed the rights conferred by Title 35 are the very rights which were taken from the petitioner by the government's eminent domain taking of petitioner's cause of action against a private infringer which destroyed petitioner's right to exclusivity. The holdings of the Court of Claims are in conflict with the holdings of this Court, and the holdings of the Court of Claims render 28 U.S.C. § 1498 unconstitutional. It is respectfully submitted that review by this Court is essential.

II. Court Of Claims Holding That 28 U.S.C. § 1498 Indiscriminately Permits The United States Government To Take A Compulsory License Under A Patent As An Exception To 35 U.S.C. § 154 Brings The Two Statutes Into Conflict.

The Court of Claims holding that 28 U.S.C. § 1498 is an exception to a patentee's exclusivity conferred by 35 U.S.C. § 154 renders the two statutes in conflict. 35 U.S.C. § 154 was enacted in 1952. 28 U.S.C. § 1498 for all intent and purposes to the present case was enacted in 1918. Even though the Congress expressly modified the terminology of the grant to a patentee in the 1952 Act,[5] no exemption was given to the United States government. This is in accord with this Court's decision in *James* v. *Campbell,* supra.

The 1918 amendment to the Act of 1910 came at a time when the United States was at war. The right to infringe patents was believed essential to permit the United States to obtain needed war supplies without disruption. There is nothing in the legislative history of the 1918 amendment or of Title 35 which suggests that Congress intended to exempt the United States government from the exclusivity conferred by the Patent Laws derived from the Constitution. If the Congress had intended that the United States government be exempt by the act of 1918, it is submitted that the exemption would have been reflected in the subsequently enacted Patent Laws, Title 35, and provision made therein to provide the patentee with "just compensation" for its loss and/or to put a prospective patentee

[5] The wording of the grant in the statute prior to the 1952 Act was—

> "of the exclusive right to make use and vend the invention or discovery . . . throughout the United States . . . ."

The wording of the grant under the 1952 Act is—

> "of the right to exclude others from making, using, or selling the invention throughout the United States . . . ."

on notice as to the limitations of the exclusivity conferred by a patent.

The Court of Claims holding that a patentee's right of exclusivity does not include the United States government is in direct conflict with the Constitution of the United States; is in direct conflict with the holding of this Court in *James* v. *Campbell,* supra; and causes 28 U.S.C. § 1498 and 35 U.S.C. § 154 to be in direct conflict. It is respectfully submitted that review by this Court is essential.

III. Court Of Claims Assertion That The United States Has A Legal Right To Use Invention Of Any United States Patent For Reasonable Royalty Is In Conflict With Fifth Amendment And Patent Laws: The Comptroller General's Directives On Procurement Cannot Ignore A Constitutionally Conferred Right Of A Patentee.

This Court expressly held in *Cramp,* supra, that the Act of 1910 was enacted to give all patentees a uniform means for recovering reasonable compensation, i.e., a reasonable royalty; for the United States' tortious use of a patentee's invention. This Court, in *Cramp,* also expressly held that the Act of 1910 did not give the United States a license to use any and all United States patents indiscriminately.

In *Cramp* counsel for the United States argued, referring to the 1910 Act, that—

> "The act meets the situation by writing what is in effect a license agreement between the Government and the patentee. It gives an additional remedy to the patentee—a substantial remedy; it provides that he shall recover compensation, whereas before he could not do so. *An object of equal importance was to insure that the Government should be free and uninterrupted in its use of patented inventions.*" (Emphasis added) [246 U.S. 28, at 32]

In expressly rejecting this contention by the United States this Court, in emphasizing that the 1910 Act did not give the government a license, but rather enlarged the patentee's rights by giving to all patentees a uniform mode for recovering damages equal to reasonable compensation or a reasonable royalty for the government's tortious use, expressly held that the patentee *retained* its rights against the infringing contractor, including his right for injunctive relief.

The 1918 amendment to the 1910 Act could not take more from the patentee than the 1910 Act for this reasonable compensation or reasonable royalty without giving just compensation for any additional taking. This Court in *Richmond Screw,* supra, in interpreting the 1910 Act, as amended in 1918, after noting that the word "entire" as added by the amendment of 1918 emphasizes the exclusive *and comprehensive* character of the remedy, stated that the 1918 amendment was more than a waiver of the sovereign immunity and *effects an assumption of liability* by the government for the tortious acts of the private wrongdoer, i.e., the infringing contractor.

Accordingly, the unauthorized use by the government is a tort; the unauthorized manufacture and sale to the government by the infringing contractor is a tort, and the measure of damages for the torts are, respectively, reasonable compensation for the government's use and, additionally, the actual damages of the infringing contractor as determined under the Patent Laws, Title 35, § 284, and *no less* than a reasonable royalty. The damages for the tortious acts of the in-

fringing contractor are not and cannot be wiped out by 28 U.S.C. § 1498. The damages are assumed by the United States government. The parties and the forum change, but the damages remain the same. To hold otherwise is to render 28 U.S.C. § 1498 unconstitutional as taking property without just compensation under the fifth amendment. As expressed by this Court in *Richmond Screw,* the *reasonable and entire compensation* under section 1498 must be equal to what was taken from the patentee. This is what the trial judge found and what was erroneously rejected by the Court of Claims.

There is nothing in the 1910 Act as amended in 1918, presently 28 U.S.C. § 1498, which can be interpreted as taking from the patentee a compulsory compensable license to the extent that the compulsory compensable license is construed other than as an individualized taking of a patentee's rights measured by the actual damages to the patentee for both the government's tortious use and the contractor's tortious manufacture and sale. To hold otherwise is tantamount to saying that the license to the government occurs *ab initio* with the grant of a patent. This leads to the unavoidable conclusion that each United States patentee, whether a United States citizen or a foreigner, at the time the United States patent is granted has a cause of action against the United States for loss of his exclusivity conferred under a patent grant.

The Comptroller General by issuing directives stating that procurements are to be made irrespective of patents cannot ignore the rights of a patentee, the same as he cannot ignore the property rights of any other citizen. The Comptroller General in issuing his directives must suffer the consequences of providing

reasonable and entire, or just compensation, as dictated by the Constitution and, we submit, by this Court. However, based on the Court of Claims decision in this case, ***which will be the law of the land unless reviewed by this Court,*** the patentee will have no recourse against an infringing contractor, and the only recovery from the United States is a reasonable royalty, obtainable only after expensive litigation in the Court of Claims, with recovery of attorney fees now clearly precluded by the Court of Claims even in an exceptional case, and regardless of even despicable conduct engaged in by the government procurement agents.[6]

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[6] The plight of a United States patentee is vividly illustrated by a note in the September 13, 1979 ***BNA's Patent, Trademark & Copyright Journal*** at pages 5 and 6 as follows:

"PATENTS CAN BE IGNORED
IN GOVERNMENT CONTRACTS

"Summarily dismissing a patentee's protest that the award of a Government contract to one of its competitors will lead to infringement, the Comptroller General makes clear that all potential suppliers are permitted to compete 'regardless of possible patent infringement.' (In re Beckman Instruments, Inc., GAO B-195193, 8/14/79)

Background

"Beckman Instruments protested the award of a contract to Bachem, Inc. As the exclusive licensee of a patent that allegedly covers the subject matter of the contract, Beckman maintains that the award may result in patent infringement.

Decision

"The Comptroller General, in an opinion by General Counsel Socolar, summarily dismisses the protest. Beckman's sole remedy, he says, is a suit for compensation in the Court of Claims pursuant to 28 U.S.C. § 1498. In effect § 1498 is 'an eminent domain statute, which vests in the Government the right to use any patent granted by it upon payment of reasonable compensation to the patent holder.'

"[Text] Considering [§ 1498] and its purpose, our Office has concluded that Government contracts should not be restricted to

Clearly, with its decision in this case, the Court of Claims has destroyed the rights of a patentee without just compensation in violation of the fifth amendment.

It is respectfully submitted that review by this Court is essential.

IV. The Holding Of The Court Of Claims As To A Compulsory License For A Reasonable Royalty Only Is In Conflict With International Treaties.

The United States government through treaties with countries throughout the world and specifically the Paris Convention of March 29, 1883, effective July 7, 1884, referred to as the International Convention on Patents as amended at Stockholm on July 14, 1967, agrees to recognize the rights of inventors of the other countries of the world. Inventors of other countries of the world, in accordance with Article 2 of the International Convention, are to have the same rights under a United States patent as a United States citizen. These published rights are the rights conferred under the Patent Laws, Title 35, which, *inter alia,* gives to the patentee the exclusive right to his invention. Title 35 does not state any exception to the right of exclusivity.

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patent holders and their licensees. Instead, all potential sources should be permitted to compete regardless of possible patent infringement. 46 Comp. Gen. 205 (1966). Therefore, the patent holder or licensee's sole remedy for any potential infringement of its rights in this respect is by suit in the United States Court of Claims against the Government for money damages. Controlled Environment Systems, Inc., B-191851, August 15, 1978, 78-2 CPD 119.

"Accordingly, a protest that patent or license infringement may result from performance under a contract awarded to another firm is not for consideration by our Office. See Miltope Corporation, B-191322, July 7, 1978, 78-2 CPD 20. [End Text]"

To permit as the law of the land the holding of the Court of Claims that the government can take a compulsory license under any United States patent at any time, regardless of whether the United States patent is owned by a United States citizen or a foreign inventor, for the procurement of any item, regardless of its need to strategic defense, is in violation of the agreement as expressed in the International Convention.

Accordingly, the holding of the Court of Claims in the present case abrogates commitments of the United States under its treaties. It is submitted that the holding of the Court of Claims must be reviewed.

CONCLUSIONS

The Court of Claims in the present case has rendered a decision in conflict, or in apparent conflict, with earlier decisions of this Court; and/or this case presents, as an important question of federal law, the interpretation of the Patent Laws, Title 35 vis-a-vis 28 U.S.C. § 1498 which as a matter of public policy must be clarified.

The decision of the Court of Claims, in apparent conflict with the earlier decisions of this Court, will be the law of the land unless reviewed and modified by this Court since, but for review by this Court, the Court of Claims has exclusive jurisdiction over the subject matter of this case.

For the reasons expressed in this Petition, a writ of certiorari should issue to the Court of Claims.

Respectfully submitted,

Alfred W. Breiner
727 - 23rd Street, South
Arlington, Virginia 22202
Attorney for Petitioner

Of Counsel:

B. W. Norton
333 Strawberry Field Road
Warwick, Rhode Island 02887

Harvey E. Bumgardner, Jr.
1230 Sixth Avenue
New York, New York 10020

September 27, 1979

APPENDIX

APPENDIX A

Opinion of Trial Judge, U.S. Court of Claims, On Accounting, Decided May 1, 1978

U.S. Court of Claims, Trial Div.

LEESONA CORPORATION

v.

UNITED STATES

No. 130-70

Decided May 1, 1978

BROWNE, Trial Judge.

Opinion *

The court held in Leesona Corp. v. United States, 208 Ct. Cl. 871, 530 F.2d 896, 192 USPQ 672 (1976) that certain claims of three patents [1] owned by plaintiff, Leesona Corporation (Leesona), are valid and infringed by defendant, the United States of America (the Government). The case is now before the trial judge for further proceedings under Rule 131(c) to determine the quantum of reasonable and entire compensation to which plaintiff is entitled under 28 U.S.C. § 1498 for the manufacture or use, by or for the Government, of the inventions described in and covered by the patents, without license or lawful right thereto.

* Rules 131(c); 134(h).

[1] Claim 9 of Moos Patent No. 3,276,909 issued October 4, 1966; claims 4 and 7 of Elmore et al. Patent No. 3,419,900 issued December 31, 1968; and claims 1, 2, 3, 5 to 8, 10, 16 and 17 of Oswin et al. Patent No. 3,436,270 issued April 1, 1969.

Inasmuch as the three patents in suit are still in force, the determination made herein is applicable only to manufacture or use of the inventions by the Government up to and including the date on which trial on the proceedings under Rule 131(c) commenced.

It is found that plaintiff is entitled to judgment in the amount of $3,534,753.52 as reasonable and entire compensation, including delay compensation, to and including December 31, 1977, plus additional delay compensation at the rate of $470.51 per day for each day from January 1, 1978 to the date of payment of the judgment. The determination is based on the evidence of record, in the light of the applicable law, due consideration also having been given to the pretrial and posttrial submissions of the parties.

I. The Patents

The infringed patents relate to "electrochemical devices for the generation of electrical energy by chemical processes, such devices being commonly referred to as batteries or cells." [2] More specifically, the devices to which the patents relate are activated initially, and reactivated as required, by mechanical (as distinguished from electrical) construction or reconstruction of the devices. Each of the infringed claims of each of the patents calls for the combination of three indispensable elements, namely, two electrodes (i.e., an anode and a cathode) and an electrolyte. The claims of Oswin et al. Patent No. 3,436,270 (the '270 patent) are the only claims which specify that the construction is such that one of the electrodes (e.g., the anode) is replaceably positioned with respect to the other electrode (e.g., the cathode) in the battery or cell.

Each claim must be considered as a definition of the invention as a whole. The omission of any one of the three

[2] Leesona Corp. v. United States, 208 Ct. Cl. 871 at 897 (finding 2) (1976).

indispensable elements would not define the invention embodied in the patented device. In the patented device the anode is a replaceable element which, by its nature and function, becomes consumed before the other elements of the battery or cell. The anode by itself, however, has no utility. It is constructed, both mechanically and chemically, to function only in the manner contemplated by the claims.

II. The Infringement

The initial taking of Leesona's patent rights in this case springs from the procurement by the Government of certain batteries, including electrodes, casings, covers and associated items from Eagle-Picher, Inc., of Joplin, Missouri (Eagle-Picher), under a contract awarded on the basis of competitive bidding. The Government's *use* of the infringing batteries and associated elements does not give rise to liability in addition to its liability for manufacture of the batteries by Eagle-Picher, since the right of the Government to use the batteries is derived from its eminent domain taking of the *license* to *manufacture*. Thus, construction or reconstruction (as distinguished from repair) of the batteries by disassembling the battery and installing a complete new set of electrodes (i.e., anodes) constitutes *manufacture* by the Government under its eminent domain license to manufacture.

III. Leesona's Business Background

A. Leesona's Development Work

In the early 1960's Leesona, an established and highly reputable manufacturer of textile machinery, embarked on a program of diversification. As part of that program it acquired Moos Laboratories, a small company engaged in the research and development of electrical devices, including "mechanically" reconstructible zinc/air batteries. A division of Leesona was established as Leesona-Moos Laboratories to conduct the battery business of Leesona.

Leesona set out to overcome the deficiencies of the BB-451/U high performance "electrically" rechargeable battery (hereinafter referred to as the '451 battery) then being used by the Government as a standard issue battery in its military field operations. Leesona submitted an unsolicited proposal to the United States Marine Corps in 1965, offering to provide a newly-developed field reconstructible (mechanically) metal/air battery (the Leesona battery) which would serve as a replacement for the conventional field rechargeable (electrically) '451 metal/air battery. Having demonstrated the advantageous characteristics of its mechanically reconstructible metal/air battery and its potentially superior military capabilities, Leesona entered into a contract [3] with the Government to manufacture a militarized version of its reconstructible metal/air battery which it had developed for commercial use. Militarization of the Leesona battery required more rugged and heavier construction than the commercial form which Leesona had produced as a prototype. The Government agreed to pay Leesona $300,000 for 22 metal/air batteries, 10 of which were to be reconstructible versions of the Leesona battery.

Leesona expended at least $100,000 of its own money, in addition to the contract price of $300,000, in producing the 22 batteries called for by the contract.

In October of 1967 the reconstructible batteries were delivered to the Government and were field tested at Camp Pendleton, California. As a consequence of the success of these tests (referred to generally as the "Pendleton tests"), the Marine Corps adopted the Leesona battery as its standard for future procurement and field use, and identified it by the symbol BB-626()/U (hereinafter the '626 battery).

[3] Contract No. DA28-043-AMC-02082(E) dated March 21, 1966. This was a "negotiated procurement" contract for property under 10 U.S.C. § 2304(a)(1), as distinguished from a contract for research and development services.

After the Pendleton tests, the Marine Corps decided to replace all of the '451 rechargeable batteries, already in the field, with the Leesona-developed reconstructible '626 batteries. It was estimated that the Marine Corps' annual procurement of the '626 batteries would be in excess of $25 to $30 million and Army requirements would be far in excess of that amount.

B. Leesona's Commitment to Manufacture Government Requirements

In anticipation of receiving a Government contract for such large quantity, long-range production of the '626 batteries, Leesona made a management decision to commit $3 million of its corporate funds to the establishment of full-scale production and manufacturing facilities. Concurrently therewith, Leesona decided to concentrate on the military market for the batteries and, consequently, to forego further efforts to exploit the non-military (civilian or commercial) potential for its unique battery, the essential features of which were the subject of issued patents or pending applications for patents in the United States and abroad.

Leesona sold some additional '626 batteries to the Marine Corps in 1968 for field testing in Viet Nam under actual combat conditions. The Leesona '626 batteries thus furnished were also found to be satisfactory for use in combat and substantially outperformed the standard '451 electrically rechargeable battery.

C. Leesona's Loss of Profits

Having decided to procure the Leesona-developed '626 batteries in quantity for field use, the Marine Corps issued Letter Contract No. MOO150-C-0363 to Leesona as a "sole source" procurement on May 12, 1969.[4] The contract called

[4] The Letter Contract was issued less than 2 months after the Oswin et al. Patent No. 3,436,270 had issued (on April 1, 1969) on the field reconstructible battery.

for delivery of 2,500 end items (batteries including associated components), together with 753,456 anodes (22 anodes per reconstruction kit), 3,000 cathode units, and 575 blower-type covers. The total contract price was set at a maximum, not to exceed $3,700,000.[5]

The Letter Contract, in the usual form, requested acceptance of the contract by Leesona and signified the intent of the Government to thereafter substitute for the Letter Contract a formal contract containing the various additional clauses required by law and procurement regulations. It also contained a clause limiting expenditures by the contractor to $1,000,000 in preparation for performance of the contract and a liquidated damages clause limiting liability of the Government to $1,800,000 in the event of termination.

The Letter Contract was accepted and signed by Leesona, and was promptly returned to the contracting officer at the Marine Corps Supply Activity in Philadelphia, Pennsylvania. The contracting officer, however, did not ratify the Letter Contract but, instead, informed Leesona that a formal contract would not be executed since a decision had been made to place the item for procurement under competitive bidding procedures in lieu of sole source procurement.

The record indicates that two battery manufacturers who had not previously built any of the '626 batteries (or any other metal/air mechanically rechargeable or reconstructible batteries) learned of the issuance of the Letter Contract for sole source procurement and asserted that they had the capability of manufacturing the item and wanted to have a chance to bid on the procurement.[6]

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[5] The maximum was predicated on a price of not more than $500 per complete '626 battery, $66 per anode kit of 22 anodes, $35 per cathode unit, and $135 per blower cover.

[6] It further appears that the purchase price set in the Leesona Letter Contract became known to one or more of the prospective bidders prior to submission of their bids.

The Marine Corps sent out requests for bids in the manner prescribed for competitive bid procurement, using in its "bid package" drawings and specifications obtained from Leesona. Pursuant to the prescribed competitive bidding procedures, contract No. MOO150-70-C-0113 (hereinafter referred to as the Eagle-Picher contract) was awarded to Eagle-Picher, Inc., the lowest of five bidders, on November 6, 1969.[7]

The contract awarded Eagle-Picher called for manufacture and delivery, according to a prescribed schedule, of 2,138 batteries, 68,182 anode kits (22 anodes per kit), 2,948 cathodes, and 732 blower-type covers. The contract included an option for the Government to increase the quantities. The contract also contained provisions which required delivery of the 2,138 batteries both within the United States and overseas, deliveries being scheduled between April 14, 1970 and February 1, 1971. The original contract was amended to provide for additional quantities of the associated components in accordance with the option provisions in the contract. The final total dollar amount of the procurement from Eagle-Picher was $3,633,056.43.

IV. Elements of Reasonable and Entire Compensation

A. Application of Title 35 U.S.C. to Actions Under Title 28 U.S.C. § 1498.

Liability of the United States for infringement[8] of a United States patent is specifically established in 28 U.S.C.

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[7] The respective bids were:

Eagle-Picher, Inc.	$2,711,348.40
Leesona-Moos Laboratories	3,301,179.32
Yardney Electric Co.	3,951,354.00
Gould, Inc.	4,965,555.48
Electrochimica Corp.	7,533,969.00

[8] The terms "infringement" and "infringes," as used in Title 35 U.S.C. and in this opinion, as well as in many opinions of this court, is intended to be synonymous with the phrase "used or

§ 1498. That section of the Code provides that the owner's remedy for the infringement is limited, as to personal jurisdiction, to an action against the United States and, as to venue, to an action in the United States Court of Claims. In such an action the owner is entitled to recover *reasonable and entire compensation* for such infringement. No factors, indicia, or other criteria are expressed in this section of the Code for evaluation or determination of the quantum of compensation which will be both reasonable *and entire*. Injunctive relief, being equitable in nature, is excluded as an alternative or additional remedy since the Court of Claims has no equity jurisdiction. It can, however, grant *entire* relief in the form of a money judgment.

In a recent case, this trial judge stated in an opinion filed pursuant to Rule 54(b), that "No ruling is made at this time as to the defenses available to defendant in actions brought under the fifth amendment to the Constitution and 28 U.S.C. § 1498(a) for the taking of patent rights granted under article I, section 8, of the Constitution of the United States and Title 35 U.S.C." Hale Bros. Associates, Inc. v. United States, Order of April 26, 1977, adopting trial judge's opinion of November 24, 1976, 213 Ct. Cl. 757, 192 USPQ 114. The time has now come for this court to make a determination of the remedies available to patentees vis a vis the Government.

The Act of June 25, 1910, infra, conferred exclusive jurisdiction on the Court of Claims for recovery of "compensation" for the taking of the rights of a patentee. In the course of codification of the laws of the United States in 1940, the Act of June 25, 1910, ch. 423, 36 Stat. 851 (as amended by the Act of July 1, 1918, ch. 114, 40 Stat. 705) was incorporated in Title 35 U.S.C. (Patents) as section 68. The text, including a *proviso* giving the Government the

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manufactured by or for the United States without license of the owner [of the invention] or lawful right to use or manufacture the same" as the latter phrase appears in 28 U.S.C. § 1498(a).

right to assert the same defenses as private litigants, was unchanged. However, in 1948, in the course of revision of Title 28, U.S.C., section 68 was transferred from Title 35 (Patents) to Title 28 (Judiciary and Judicial Procedure) as section 1498 of that title (Act of June 25, 1948, ch. 646, 62 Stat. 941).

The Reviser's Note appended to 28 U.S.C. § 1498 (1970) explains that the aforementioned *proviso* was omitted from the text of the recodification of section 68 of Title 35 U.S.C. as section 1498 of Title 28 U.S.C. since it was "unnecessary."

When Title 35 U.S.C. was recodified to reflect the changes brought about by the Patent Act of July 12, 1952 (Pub. L. No. 82-593, ch. 950, 66 Stat. 792), section 68 of the "repealed" Title 35 was referred to as having been "repealed" by the Act of June 25, 1948, supra.

Except for the inclusion of a provision which extends the 6-year statute of limitations (35 U.S.C. § 286) in suits against the Government, in a specific situation not here pertinent, nowhere else in Title 35 U.S.C. does there appear to be anything which bears directly on the rights of patentees against the Government or the defenses available to the Government in actions brought for reasonable and entire compensation for use of patented inventions by or for the United States under 28 U.S.C. § 1498.

The current statute under which the Government may be sued for patent infringement (28 U.S.C. § 1498(a) (1970)) does not specify any increase or limitation on damages comparable to that set forth either in 35 U.S.C. § 284, § 286, or § 287 (1970), nor does it enumerate any defenses which are available to the United States comparable to those enumerated in 35 U.S.C. § 282 (1970) as being available in a civil action under 35 U.S.C. § 281 (1970) between private parties in the United States District Courts.

Whereas the remedies available to patentees in suits between private parties specified in 35 U.S.C. §§ 283, 284, and

285 include injunctive relief as well as recovery of damages and attorney fees, the sole remedy available to patentees in suits against the Government is specified in 28 U.S.C. § 1498 (a) as the recovery of "reasonable and entire compensation" from the United States. It appears, therefore, that the specific provision for reasonable and entire compensation under 28 U.S.C. § 1498(a) is intended by Congress to be a total replacement of the specific provision dealing not only with damages within 35 U.S.C. § 284, but also attorney fees within 35 U.S.C. § 285.[9] Thus, I am forced to conclude that the Government, if it infringes a plaintiff's patent rights, can be assessed up to treble damages and attorney fees since the Government, if it avails itself of the defenses afforded by Title 35 U.S.C., must also be subject to the liabilities

[9] In Regent Jack Mfg. Co. v. United States, 155 Ct. Cl. 222, 292 F.2d 868, 130 USPQ 235 (1961), the opinion of the Commissioner (which was adopted per curiam by the majority) rejected plaintiff's claim for damages under 35 U.S.C. § 284 and attorney fees under 35 U.S.C. § 285. The Commissioner concluded that the court "is not authorized to award specific damages and/or attorney fees as such" under 28 U.S.C. § 1498 since that statute does not specifically authorize the court to award anything other than "reasonable and entire compensation." The words "reasonable and entire" are certainly not specific in terms of what elements are properly includable. The Commissioner's view is not reconcilable with the cases in this court which allow "delay compensation," "reasonable royalty," and "lost profits" to be included in the computation of reasonable and *entire* compensation. There was no finding in Regent Jack, id., as there is in the present case, that it was an exceptional case. Plaintiff, in subsequent proceedings, Regent Jack Mfg. Co., 179 Ct. Cl. 924 (1967), sought interest on the amount of recovery and the costs of seeking interest on the recovery, but the court sidestepped the issue on the ground that the amount of recovery was stipulated by settlement and the *settlement* did not provide for the payment of interest. If the court was convinced that interest could not be included in reasonable and entire compensation, it could have based its denial of plaintiff's claim for interest and costs on that basis. As it now stands, it appears that the question of what *is* includable in reasonable and *entire* compensation is still open ended.

specified therein. The only exception is the injunctive relief available under section 283 since this court has no jurisdiction to grant equitable relief. Calhoun v. United States, 197 Ct. Cl. 41, 52 n. 7, 453 F.2d 1385, 1391 n. 7, 172 USPQ 438, 443 n.7 (1972).

While the Government should be unrestrained in its lawful exercise of its fifth amendment eminent domain power, multiplication of damages, in this case, would not inhibit this exercise. The increase of damages, if authority is found to exist, is primarily to inhibit the willful and deliberate taking *in bad faith* of a patentee's rights, not the mere taking, itself, by the United States. I hold that the damages can be increased by the court pursuant to 35 U.S.C. § 284. Moreover, I hold that there exists sufficient bad faith on the part of the Government to justify a finding that this is an exceptional case warranting the award of reasonable attorney fees to plaintiff either as part of plaintiff's reasonable and entire compensation (damages) or as provided by statute in 35 U.S.C. § 285.

1. Reasonable Royalty as Minimum

Title 35 U.S.C. § 281 provides that a patentee shall have remedy for infringement by a member of the private sector in a civil action in a United States District Court of competent jurisdiction and venue. Upon a finding for the patent owner in such a case, the court shall award "damages" adequate to compensate for the infringement but in *no* event *less* than a reasonable "royalty" for the use made of the invention by the infringer (together with interest and costs as fixed by the court). 35 U.S.C. § 284.

The word "reasonable" as it appears in 28 U.S.C. § 1498(a) is synonymous with that word as used in the phrase "reasonable royalty" which appears in 35 U.S.C. § 284. Thus, as a *minimum,* the owner of a patent is entitled to recover a sum of money *not less* than a *reasonable royalty* when the patent is infringed by the United States. In-

deed, this court has equated the term "reasonable" to the term "reasonable royalty" by using the latter term as but one *element* of reasonable and entire compensation. See, e.g., Carley Life Float Co. v. United States, 74 Ct. Cl. 682, 13 USPQ 112 (1932); Tektronik, Inc. v. United States, 213 Ct. Cl. 257, 552 F.2d 343, 193 USPQ 385 (1977).

The question remains, however, as to what other elements of compensation which, when added to a "reasonable royalty," will make the *compensation* both reasonable *and entire*.

There is no statutory basis for a contention that the remedy to which a successful plaintiff is entitled in an action in the Court of Claims is *limited* to a "reasonable royalty." The conjunctive use of the word "entire" in 28 U.S.C. § 1498(a) affords a statutory basis for the inclusion of more than a "reasonable royalty" in the money judgment awarded. The legislative history of the statute in question lends support to this interpretation. In 1910, after considerable debate, the antecedent of 28 U.S.C. § 1498 was enacted. The 1910 statute, in waiving sovereign immunity, provided patent owners a limited remedy for infringement of patents by the United States. Specifically, the statute allowed such owners to recover only *reasonable* compensation for such infringement. (Emphasis added). Ch. 423, 36 Stat. 851 (1910). In 1918, however, the statute was amended to provide that the patent owner could recover not only reasonable but reasonable *and entire* compensation for such infringement. Ch. 114, 40 Stat. 705 (1918). (The terms of the amended statute, in this respect, are substantially identical to the wording of the present text of 28 U.S.C. § 1498(a)). The reason for the amendment is not established by the legislative history of the public law in which it was incorporated.[10] The language of the statute

[10] 56 CONG. REC. 5334-61, 5365-91, 7955-85, 8012-24 (1918). 56 CONG. REC. 6886-910 (1918).

is clear that the preexisting measure of recovery was expanded to include something more than mere reasonable compensation. Thus, the word "entire" is all-encompassing.

2. *Multiplication of Damages*

A further issue, therefore, is what compensation, in addition to a reasonable royalty, should be awarded Leesona to provide *entire* compensation as mandated by 28 U.S.C. §1498? In resolving this issue the only other statutory source to which the court may resort is Title 35 of the United States Code, which is the only title of the United States Code which deals with the fundamentals of patent law. In the same section of that title which provides for payment of a reasonable royalty to a claimant (i.e., § 284), Congress has provided that the court may increase the damages found or assessed *up to* three times the amount found or assessed. In civil actions between private parties, courts have frequently increased the recovery beyond a "reasonable royalty" by taking into consideration the willfulness and deliberateness of the infringement and/or bad faith of the infringer. See, e.g., Trio Process Corp. v. L. Goldstein's Sons, Inc., 533 F.2d 126, 189 USPQ 561 (3d Cir. 1976); Saf-Gard Products, Inc. v. Service Parts, Inc., 532 F.2d 1266, 190 USPQ 455 (9th Cir. 1976).

In the absence of any other express statutory criteria to aid the court in determining reasonable and entire compensation pursuant to 28 U.S.C. § 1498, the provisions of Title 35 must be relied upon to ascertain the intent of Congress as to the extent to which the United States, as well as any private party, may be held liable for the usurpation of the exclusive right of a patentee. The applicable provisions of Title 35, therefore, fill an apparent gap in 28 U.S.C. § 1498(a) with respect to the elements which, when added to a reasonable royalty, provide entire compensation for use of a patented invention by the United States when it exercises its right of eminent domain by a taking of patent

property under the fifth amendment. It would be absurd to conclude that the United States is less liable to a patent owner than a private citizen when a patent is infringed.[11] Accordingly, all *legal* remedies (as distinguished from *equitable* remedies) provided in actions under Title 35 are applicable in determining reasonable and entire compensation in actions in the Court of Claims under 28 U.S.C. § 1498(a).

The nature of relief to be granted is not limited by any specific language of 28 U.S.C. § 1498. By implication, however, the statute precludes injunctive or other equitable relief since the remedy is limited to recovery of reasonable and entire *compensation*. 28 U.S.C. § 1498(a). Only *compensation* in the form of monetary damages may be awarded to the owner of a patent which is infringed by the United States.[12]

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[11] The United States, as defendant, has often argued before this court that the *defenses* of Title 35 are applicable to suits brought under 28 U.S.C. § 1498. The Government's argument is based on a proviso of the predecessor of 28 U.S.C. § 1498, i.e., 35 U.S.C. § 68, which proviso established the right of the United States to assert in an action in the Court of Claims any general or special defenses available to defendants in patent infringement suits in private actions in the United States District Courts and Circuit Courts of Appeals. Upon recodification, this proviso was eliminated on the ground that the revisers thought it "unnecessary." The Government has recently argued that the section of Title 35 dealing with the limitation of damages, 35 U.S.C. § 286, is also available to the United States in its attempts to defend an action brought under 28 U.S.C. § 1498. The Government cannot eat its cake and have it, too. If the United States is entitled to employ all of the defenses of Title 35, then it must also be subject to all of the liabilities of Title 35 (injunctive relief being excluded by virtue of its equitable character, which this court is without jurisdiction to grant). To paraphrase an axiom of antitrust law, the defendant cannot use 28 U.S.C. § 1498 both as a shield and as a sword.

[12] Courts have consistently refused to grant injunctive relief against the sovereign, notwithstanding the patentee's right of exclusivity as to infringers generally. See, e.g., City of Milwaukee v. Activated Sludge, Inc., 69 F.2d 577, 593, 21 USPQ 69, 85 (7th Cir.), cert. denied, 293 U.S. 576 (1934). See also Stelma, Inc. v. Bridge Electronics Co., 287 F.2d 163, 128 USPQ 373 (3d Cir. 1961); Nerney v. New York, N.H. & H.R. Co., 83 F.2d 409 (2d Cir. 1936); North American Philips Co. v. Stewart Engineering Co., 319 F.Supp. 335, 166 USPQ 477 (N.D. Cal. 1970); Foundation Co. v. Underpinning & Foundation Co., 256 F. 374 (S.D.N.Y. 1919). The law is well settled that a patentee is entitled to an injunction against infringement if the suit is between private parties. 35 U.S.C. § 283.

No express or implied statutory limitation exists in 28 U.S.C. § 1498 with regard to the award by this court of any given multiple of damages if the court is convinced that the increase of damages is warranted by the facts of the case. By reading the second paragraph of 35 U.S.C. § 284 into 28 U.S.C. § 1498, the court may assess damages *up to* three times the amount found or assessed. This permits the court to increase the quantum of compensation above a "reasonable royalty" in order that the compensation will be not only reasonable, but also *entire*.

3. *Attorney Fees in Exceptional Cases*

In *Tektronix, Inc. v. United States, supra,* the court held that attorney fees were not to be included in arriving at the entire compensation to be awarded plaintiff in that case. The court, in a ruling in the instant case on March 4, 1977, again held that attorney fees are not allowable as part of *entire* compensation under section 1498 since ". . . Congress has passed no such statute awarding attorneys' fees and litigation expenses in a 28 U.S.C. § 1498 action." It is resepectfully submitted that the court did not consider the fact that Congress *has* provided for recovery of attorney fees "in exceptional cases" in section 285 of Title 35. There had been no finding in this case, prior to the court's ruling, that this is an "exceptional case" warranting the award of attorney fees as contemplated in 35 U.S.C. § 285. Such a finding has now been made and, on the theory that

all relief (except injunction) available under section 285 of Title 35 is also available, in an action under section 1498 of Title 28, it is within the power of this court to include attorney fees in this unique case.[13]

B. Savings to the Government

The court also pointed out in Tektronix, supra, that by avoiding the costs of engineering and developing an item, a contractor is often able to underbid a patent owner under competitive bidding procedures by the amount saved and thus pass such savings on to the Government. The Leesona bid of $3,301,179.32 (the second lowest bid) is presumed to have included at least a portion of Leesona's development costs, whereas the lowest bid (Eagle-Picher) was presumably reduced since Eagle-Picher was able to take advantage of the development costs borne by Leesona. The saving to the Government resulting therefrom is deemed to be the difference between Leesona's bid if it had been awarded the contract and Eagle-Picher's total receipts under the Government contract. This difference is equal to $768,719.10. Accordingly, that amount will be included as part of Leesona's recovery under 28 U.S.C. § 1498(a).

It cannot be said that Leesona's bid was inflated or unrealistic since the prices quoted by the other unsuccessful bidders were substantially higher than those submitted by either Leesona or Eagle-Picher (see note 7 supra for comparison of bids).

C. Recovery of Investment by Leesona

Leesona seeks just compensation in an amount which will place it in the same economic position it would have held if defendant had not taken Leesona's exclusive right to

[13] As will be seen hereinafter, the present case is "exceptional" and, based on that distinction, attorney fees have been included in arriving at the quantum of entire compensation to which Leesona is entitled in this case.

make the '626 batteries, anodes, covers and associated components. Leesona maintains that "but for" defendant's taking of Leesona's patent rights, plaintiff would have exercised its right of exclusivity, and therefore Leesona is entitled to recover $5,660,000, the total amount of its viable, pre-taking investment (including research and development costs) as well as capital expenditures made in anticipation of production of long-range Government projected requirements. That is to say, Leesona maintains that "but for" the defendant's eminent domain taking, plaintiff would have remained in the business of manufacturing metal/air batteries, not only to satisfy defendant's requirements, but also to be in a position to supply the non-military market in the event it elected to exploit that market as well and thereby recover its total investment over a shorter period of time.

Leesona's theory is that even though the total amount of compensation it seeks under this theory is significantly greater than the total procurement of the cost of the infringing items to the defendant, the total provable economic loss suffered by Leesona must, nevertheless, be borne by defendant. Plaintiff cites no precedent in support of its novel theory of recovery, and the trial judge is not persuaded by it. Therefore the amount of pre-taking investment is excluded, reasonable and entire compensation being determined by other criteria..

This court has held that costs incurred by an unsuccessful bidder in anticipation of an award of future Government contracts are not recoverable. General Dynamics Corp. v. United States, 202 Ct. Cl. 347(1973). Where, however, costs and expenses are incurred by a party in reliance upon receipt of a Letter Contract in which a pre-performance investment of $1,000,000 was authorized, it should be permissible to include proven pre-performance investment in the computation of reasonable and entire compensation where the Government reneges on its commitment and, instead, takes that party's patent rights and gives the contract to an unlicensed party. It is immaterial

that the Government utilized competitive bidding procedures in awarding the contract to the unlicensed party. The patent owner, thus, is entitled to have its relevant costs and expenses of preparation to perform included, in some way, in the amount of compensation to be recovered under 28 U.S.C. § 1498 for infringement of its patent by the Government.

Where, as in this case, the Government has exhibited the utmost bad faith not only by willfully and deliberately infringing plaintiff's patents, but also by furnishing the fruits of plaintiff's development to its competitors in the bidding process, the patent owner is entitled to recover more than the *actual* amount of its loss. Title 35 U.S.C. § 284 authorizes the court to allow up to *three* times the amount of damage found. In addition, where the Government proceeds in such reckless disregard for plaintiff's legal rights and equities, there is still further basis for holding this to be an "exceptional case" warranting award of attorney fees under the congressional intent expressed in 35 U.S.C. § 285. (See discussion of attorney fees at page 19, supra.) By increasing plaintiff's damages to *twice* the amount found in this case, its compensation will be not only reasonable but also sufficient to compensate it for part of its pre-taking investment and part of its attorney fees.

D. Loss of Profits

In Tektronix, Inc. v. United States, supra, 213 Ct. Cl. at 267, 552 F.2d at 349, 193 USPQ at 390-391 (1977), the court stated that lost profits may be awarded the plaintiff in an action based on 28 U.S.C. § 1498 "only after the strictest proof that the patentee would actually have earned and retained those sums in its sales to the Government." Tektronix failed to sustain the prescribed burden because it did not show by clear and convincing evidence that *it* would have supplied the "commercial" scopes which were procured from third parties or that *it* would have made and

kept the profits if *it* had supplied the items. Leesona, on the other hand, was not only ready, willing and able to supply the batteries which the Government ultimately procured from Eagle-Picher, but also it had previously been awarded a Letter Contract for those batteries. Since there was no history of production or sale of such batteries by anyone, Leesona was not able to establish an average percentage of profit on the manufacture and sale of such batteries. Even if the profit actually realized by Eagle-Picher in performance of the contract was established, it would not be a proper measure of the amount of profit lost *by Leesona.* See Tektronix, supra. There is evidence that Leesona used a 15 percent profit margin in computation of its projections. Since there is no evidence to establish an actual profit, and the 15 percent figure is reasonable, that percentage is used in computation of Leesona's loss of profits directly attributable to the taking of Leesona's patent rights by defendant. Leesona's lost profits should be computed on the theory that the total dollar procurement would have been $4,401,572.42 if Leesona's bid had been accepted and if it also supplied the additional optional quantities actually furnished by Eagle-Picher. Accordingly, Leesona's lost profit is $660,235.85 [14]

E. Computation of Equivalent of Reasonable Royalty

Various criteria may be employed in determining the amount which the owner of an infringed patent should receive as the equivalent of a "reasonable royalty." If there is evidence of an existing license under the patent or patents in suit, that license may be used as a starting point to determine whether the rate should be higher or lower in light of the circumstances of the case. Only if there is no history of licensing, either by the patent owner or others in the field to which the patents pertain, is there justifica-

[14] The profit lost by Leesona if based on the contract awarded to Eagle-Picher would be only $544,958.46.

tion for resorting to the willing seller/willing buyer approach taken in cases such as Georgia-Pacific Corp. v. U.S. Plywood Champion Papers, Inc., 446 F.2d 295 (2d Cir. 1971), 170 USPQ 369, cert. denied, 404 U.S. 870, 171 USPQ 322 (1971). There is evidence in this case that Leesona granted licenses under the patents in suit but only for manufacture outside the United States under its foreign patents. Before discussing Leesona's licensing practices and royalty rates, a review of the defendant's contentions is desirable.

1. Compensation Rate

The royalty rate which RCA established in its licenses to manufacturers of batteries is entitled to little weight in determining the compensation rate to be applied in this case. RCA was not a battery manufacturer, did not want to be a battery manufacturer, and had no desire to exercise its exclusive right to manufacture batteries under its patented inventions. The only conclusion that can be drawn from the testimony of the RCA witness who dealt with commercial licensing of RCA patents is that the range of royalty rates for its extensive variety of patented electronic items is from a minimum of about 1½ percent to a maximum of 10 percent of the net selling price of the products in which the inventions were utilized.

Leesona, in contrast to RCA, would only have accepted a relatively high royalty rate from a domestic licensee due to its often-expressed intent to retain its exclusive right to manufacture its batteries within the United States.

Defendant asserts that the RCA minimum average royalty rate of 1½ percent is reasonable and should be applied in this case since the 5 percent to 7½ percent royalty rate established in plaintiff's licenses includes other patents, know-how, trade secrets and trademarks.

I find that a royalty rate of 1½ percent is not sufficient to constitute the equivalent of a reasonable royalty in

light of the established advantages and superiority of the patented invention over the standard batteries being used by the military prior to Leesona's entry into the field. It is significant that plaintiff invested in excess of $5 million in its research, development, and preparation for production of its patented battery. Clearly, it would not be willing to accept a minimal royalty figure in return for its forfeiture of its exclusive right to manufacture the patented battery within the United States.

While plaintiff's licenses did not prohibit others from *selling* the patented batteries in the United States, it never was willing to grant the right to others to *manufacture* them within the United States.

Leesona's license agreements all required the payment of an initial license fee as well as a minimum annual royalty regardless of the number of units actually manufactured during the applicable royalty period. The agreements with Hitachi Maxell, ECL, and Crompton-Parkinson granted, at most, the implied right to *sell* within the United States such batteries as may have been *manufactured outside* the United States. The minimum royalty rate for batteries manufactured under these agreements was 5 percent of the net selling price. This is the minimum from which a reasonable royalty rate may be extrapolated from the evidence in this case. It is clear that Leesona would not be willing to license another party to manufacture batteries *within* the United States at a royalty rate *less* than the rate it had established for the manufacture of batteries abroad under its patents in those countries. Accordingly, the 5 percent royalty rate established under its foreign patents must be adjusted *upwardly* to constitute the equivalent of a "reasonable royalty" in this case.

Under the facts and circumstances of this case, I hold that a reasonable compensation rate (i.e., the equivalent of a "reasonable royalty") would be 10 percent of the market price of the batteries and associated components. A poten-

tial licensee, if reasonable, would recognize that plaintiff, who took substantial risks and bore the huge expenses of developing the batteries and creating a market for them, was entitled to adequate compensation for those efforts and for its ingenuity in creating this important and effective battery. Tektronix v. United States, supra, 213 Ct. Cl. at 270, 522 F.2d at 350, 193 USPQ at 392-393.

This compensation rate further appears to be reasonable since it does not exceed the maximum royalty rate established by RCA between 1½ percent and 10 percent under patents covering electronic items, many of which RCA does not manufacture.

The 10 percent compensation rate certainly is not excessive in light of the fact that plaintiff probably would not have accepted a lower figure for domestic manufacture in order to recoup its substantial monetary investment in the domestic battery market. Royalty rates established on the basis of Government procurement are frequently lower than the rates established in private industry since Government procurement normally exceeds that of private industry by many fold.

Additionally, the 10 percent figure is not considered to be out of line when one realizes that the parties who were, in fact, licensed to manufacture abroad, were not precluded from selling the subject batteries to the United States Government for use in the United States or elsewhere. Plaintiff was virtually certain, as evidenced by an internal memorandum, that the defendant would be willing to give at least a 1½ percent royalty to plaintiff as a matter of course. It would be unconscionable to impose such a low royalty rate upon plaintiff in this case. It would be tantamount to establishing defendant as the sole arbiter and dictator of the amount of reasonable and entire compensation to be allowed a successful plaintiff after long and expensive litigation.

Plaintiff's objection to the "willing buyer/willing seller" approach in determining a reasonable royalty is well taken in the present case, for this approach is resorted to merely as a "device in aid of justice" (Cincinnati Car Co. v. New York Rapid Transit Corp., 66 F.2d 592, 595, 19 USPQ 40, 43 (2d Cir. 1933)), not as an inflexible measuring stick. In any event, the "willing buyer/willing seller" charade does not depend on the *actual* willingness of the *parties to a lawsuit* to engage in such negotiations, but upon a hypothesis applied to theoretical or assumed conditions. Since plaintiff was not willing to grant to anyone a license to *manufacture* the batteries *within the United States,* there is no tangible evidence available to indicate what a willing buyer was willing to pay and what Leesona was willing to accept under the specified conditions. The evidence shows, however, that plaintiff would have disposed of its entire battery business, including its patent rights throughout the world, at a negotiated but prefigurative sum if, after it lost out on the '626 contract and after this litigation was commenced, a willing buyer came along. That figure was $8 million. Although plaintiff's evaluation is not binding, it is entitled to substantial weight since:

> * * * The rule to be applied in measuring the compensation depends upon the facts and circumstances of each case, but the end to be obtained in every case is always the same, namely, the determination and allowance of just compensation to the patentee for the *value to him* of the right or license to use appropriated by the Government. Richmond Screw Anchor Company v. United States, 275 U.S. 331; * * * The Berdan Fire-Arms Manufacturing Company v. United States, 26 C. Cls. 48, 82. * * * [Emphasis supplied.]

Tektronix v. United States, supra, 213 Ct. Cl. 257 at 265; 552 F.2d 343 at 347, 193 USPQ at 389-390.

Plaintiff, on the other hand, would have been willing to grant an exclusive *license* merely under its patent rights

throughout the world for a lump-sum payment of $1 million. That, however, was only *after* the Government had seized a nonexclusive license under Leesona's United States patents for the Government's own use.

I conclude that a royalty rate of 10 percent of the contract price of the batteries and accompanying components is reasonable and will be applied.

2. Compensation Base

Each of plaintiff's patent claims, previously found to be valid and infringed, recites an electrochemical cell comprising an anode, a cathode and an electrolyte. Inherently the components require a casing or receptacle, together with the necessary connecting wires and terminals to provide a complete and operative device. The compensation base should include all of those elements of the device which form an operable structure, since it is only on the basis of such a structure that an "entire market value" of the device can be established. Additionally, the compensation base should include those associated items procured by the defendant which satisfy a two-pronged test, i.e., functional symbiotic dependence and economic dependence between the patented items and the associated items. The test is based on the view, stated in Tektronix, supra, that normally the patentee can anticipate the sale of patented or unpatented components separately as well as in the patented combination. Id., 213 Ct. Cl. at 272; 552 F.2d at 351, 193 USPQ at 393.

Conversely, the compensation base may be diminished by an amount equal to the price of items which are ordinary staple articles of commerce or incidental repair parts for the patented article, *if the patented article is procured from the patent owner or a licensed source.*

The contract awarded to Eagle-Picher, Inc., not only required the delivery of a specified number of "batteries" as one line item, but also called for separately identified com-

ponents which are within the ambit of the infringed claims, namely "anode kits," "cathode cells," and special "battery covers." The "anode kits," each of which is made up of 22 separate anodes, were required to operate the batteries throughout their expected lives of 50 "cycles" or more.[15] The separate cathodes were required as original equipment spares. The special covers were provided for use in lieu of standard covers, at the option of the user. The total original bid price for all items in the contract with Eagle-Picher, Inc., including packaging, manuals and other matter, for which no specific price was stated, was $2,711,-348.40. The total Government procurement was increased by $921,708.03 to $3,633,056.43 by the defendant's exercise of its options since the original quantity of anode kits and cathodes called for by the contract was only sufficient to maintain the batteries in operation through approximately 30 cycles. Defendant's purchase of approximately 50 percent more anode kits and cathode cells enabled defendant to maintain the batteries throughout their expected lives of about 50 "cycles." (By analogy, those components are the equivalent of the "plug-ins" and "spare parts" which were included in the compensation base in Tektronix, supra, and Pitcairn v. United States, 212 Ct. Cl. 168, 547 F.2d 1106, 192 USPQ 612 (1976), as amended on rehearing, 212 Ct. Cl. 224 (1977), cert. denied, 434 U.S. , 215 Ct. Cl. , 196 USPQ 864 (1978). The compensation base in this case, therefore, is $3,633,056.43.

The "anode kits" called for by the contract are the subject of Moos United States Patent 3,531,327 (the '327 patent) which the Court of Claims previously held is licensed to the United States. Defendant contends, therefore,

[15] The battery in evidence is provided with a label upon which the successive dates of replacement of anodes is to be entered. There are consecutively numbered spaces for 50 such entries. Thus it is clearly indicated that each battery is expected to have a useful life of at least 50 "cycles."

that the portion of the contract price attributable to the "anode kits" (item 0002) should be excluded from the compensation base.

The Moos '327 patent, essentially, relates to a novel type of *packaging* of consumable metal anodes in an impermeable envelope which contains some electrolyte to keep the anodes moist. Although defendant has a license to use the claimed invention in the packaging and shipment of the anodes, liability for infringement of the claims of the unlicensed Leesona patents is not avoided. The '327 Moos patent is but an improvement of the inventions covered by the infringed claims and is, therefore, subordinate to and dominated by those claims. Hence, the license to use the *improvement* does not carry with it a license to use the inventions covered by the infringed, unlicensed claims of the other Leesona patents. The anode kits, therefore, are properly included in the compensation base. Notwithstanding defendant's license to package and ship anodes in accordance with the '327 Moos patent, the license under that patent does not permit defendant to use the anodes thus packaged in *reconstructing* the patented combination procured from a source which is not licensed under the claims of the infringed patents. Stukenborg v. United States, 178 Ct. Cl. 738, 747, 372 F.2d 498, 504, 153 USPQ 292, 297-298 (1967).

The fact that a person, by purchasing a device from a licensed source, has an implied license to *use* that device, does not, ipso facto, give him a license to use that device in combination with other elements or structures if the resulting product infringes the claims of an unlicensed patent. Id. 178 Ct. Cl. at 748, 372 F.2d at 504, 153 USPQ at 297-298. Accordingly, defendant cannot, without liability, use anodes procured from Eagle-Picher to reconstruct or repair batteries which have not been procured from Leesona or a source licensed under Leesona's patents.

The additional anodes procured by defendant from Eagle-Picher were not, in reality, procured as mere repair parts for the batteries. Rather, the additional anodes were procured to eliminate the necessity for supply of a whole new battery where the power of the original battery would fall below the minimum necessary for operation. Replacement of original anodes one at a time was clearly not contemplated. The rationale of procurement of the anodes in "kits" of 22 each is directly related to the inventive concept embodied in the infringed claims. The very crux of the present invention is the feature of mechanical "rechargeability" by total replacement of all 22 of the original anodes with 22 new anodes. Thus, each time an "anode kit" is used, the resulting product is virtually a new battery. Under the doctrine of repair or reconstruction, a device is reconstructed if it takes on the nature of a new infringing device, whereas, if the device is merely repaired, it does not take on the nature of a new device. Id. 178 Ct. Cl. at 747, 372 F.2d at 503, 153 USPQ at 296-297.

In conclusion, I hold on the facts in this case that wholesale replacement of the anodes of the claimed batteries by use of the anode kits procured from Eagle-Picher constitutes total reconstruction of the batteries with unlicensed components. Therefore, the cost of the anode kits will be included in the compensation base.

The cathode cells procured in substantial quantity by the defendant are also totally useless without the anodes and electrolyte of the claims covering the infringing batteries. Likewise, the patented batteries are useless without properly functioning cathodes. It will be noted that the batteries, as procured, are provided with a complete set of operating cathodes. The purpose of procuring additional cathodes at the time of procuring the complete batteries and additional anodes is to provide for continuous service of the batteries throughout their expected lives. Economic dependence of the cathodes upon the batteries, and vice versa, is obvious;

the sale of batteries necessarily entails the reasonable expectation of the sale of cathodes. Accordingly the cost of the cathodes is includable in the compensation base. Stukenborg v. United States, supra.

This court, in Calhoun v. United States, supra, recognized that the eminent domain foundation of an action under 28 U.S.C. § 1498 is revelant to the distinction made by the Supreme Court between Aro I (Aro Mfg. Co. v. Convertible Top Replacement Co., 365 U.S. 336, 128 USPQ 354 (1961)), and Aro II (Aro Mfg. Co. v. Convertible Top Replacement Co., 377 U.S. 476, 141 USPQ 681 (1964)). The distinction that the Supreme Court drew was that the licensee of a patented combination has the privilege of preserving the combination for use until the combination, as such, is defunct, and thus can repair (but not reconstruct) it. However, the *un*licensed infringer, having no such right, is liable for repair as well as reconstruction. Id., 377 U.S. at 483-485, 497-99, 141 USPQ at 684-686, 690-691.

The present case is distinguishable from General Electric Co. v. United States, Ct. Cl. No. 81-70, slip op. filed February 22, 1978. The court pointed out in that case that the components used by the Government to reconstruct or repair the devices in suit were already licensed by virtue of procurement thereof from General Electric, the patent owner. On this distinction, the court reversed the holding of the trial judge. In the present case the original articles and all components procured by defendant were obtained from an infringer, namely Eagle-Picher. At no time did defendant ever pay Leesona for the items which are included within the compensation base in this case. Accordingly, there cannot possibly be a double recovery by Leesona since it has not even been compensated for the initial taking.

The electrodes in the present case are analogous to the cylinder and piston in Calhoun, supra, but not to the "o" rings. The batteries in the present case are reconstructed

each time one or more electrodes is installed in the batteries since the electrodes are, in effect, *the batteries.*[16] Thus the Government must pay fully for its right to "use of the whole" of the combination, including "replacement of a spent, unpatented element" until the *combination,* as such, is defunct. Id. See also Aro Mfg. Co., supra, 365 U.S. at 342-43, 346, 128 USPQ at 357-58, 359; 377 U.S. at 510, 512-13, 141 USPQ at 695, 696. Therefore, all cathodes and anodes, whether incorporated in the batteries as manufactured or furnished as additional line items under the contract, are the equivalent of the claimed combination and must be included in the compensation base.

Defendant contends that the value of the "spacers" employed to separate the cathode cells from one another in the batteries, as manufactured, should be excluded from the compensation base. The spacer is the subject of Rosanky Patent No. 3,378,406, which has been held invalid by the court in this case. While the spacers represent unpatentable components of the batteries as manufactured, they are nevertheless an integral and indispensable element of the cathodes of the batteries procured by the Government, whether patented or unpatented, licensed or unlicensed. The spacers, accordingly, will not be excluded in computing the compensation base.

The costs of packaging, manuals and other miscellaneous costs are excludable from the compensation base. The burden of proof of the amount of these costs, however, is upon the infringer. Westinghouse Electric & Mfg. Co. v. Wagner Electric & Mfg. Co., 225 U.S. 604 (1912). In the Westinghouse case, the Court placed on the infringer the

[16] In fact, each "cell" consisting of a cathode, an anode, and an electrolyte, is a "battery." The infringing devices, therefore, are made up of 22 "batteries" interconnected to provide the desired total power. If more power would be desired, the battery would be designed for more cells. If less power would be desired, fewer cells would be provided.

burden of separating out profits attributable to noninfringing items from profits attributable to the infringing sales. The Court reasoned that since the wrongdoer had maintained his records in such a way that the source of his profits could not be distinguished, he would be liable for all profits resulting from his operations. As no proof was offered by the United States in the present case with respect to the cost of packaging, manuals, or other miscellaneous items, no exclusion from the compensation base will be undertaken for such items.

3. Reductions in Compensation Base

Two cost reductions in its bid price were offered by Eagle-Picher and accepted by the defendant. One item was a reduction of $306.22 in the total contract price of item 0001, the battery. The second item, in the amount of $50, was also attributable to cost savings on item 0001. Defendant accepted 50 percent of the $306.22 cost saving, namely $153.11, and 100 percent of the $50 saving, for a total reduction of $203.11. That amount will be deducted in computing the compensation base even though the amount is virtually de minimis.

4. Use of Batteries by the United States

Defendant does not object to the inclusion of complete batteries, per se, within the compensation base. It urges, however, that the base should be limited to the number of batteries which were actually put into *use.* All batteries are included within this accounting since they infringe plaintiff's claims as a consequence of the *manufacture* of the batteries in the United States for the United States Government, regardless of use or non-use thereof. Thus, the compensation base is not diminished by any amount due to the exclusion of batteries or components which were manufactured for defendant but may not have been *used* prior to the date of trial of this phase of the litigation.

The defendant further maintains that of the 2,138 batteries procured by the United States, 572 were shipped to Okinawa and therefore were never used *within* the United States nor *intended* for such use. Defendant desires this court to exclude the cost of the 572 exported batteries from the compensation base. Although 28 U.S.C. § 1498(c) specifically provides that "the provisions of this section shall not apply to any claim arising in a foreign country," I am constrained to point out that plaintiff's claim does not *arise* in a foreign country but, rather, *arose* in the United States as a direct result of the defendant's procurement as well as its acts of inducing and contributing to the infringement of Leesona's United States patents, all of which occurred within the United States. The fact that the batteries were delivered to defendant or used abroad by defendant does not result in exclusion of the batteries from the compensation base. The batteries shipped abroad were not only *manufactured for but also were used by* the United States, within the scope of 28 U.S.C. § 1498. It matters not that some of the batteries were never actually used within the political boundaries of the United States. It is a fact that the batteries were not only *manufactured* in the United States for the United States, but were also available for *use,* and were capable of being used by and for the United States.

In the present case, all of the parts of the patented combination were manufactured by one unlicensed contractor, assembled and packaged in a single box, and shipped pursuant to defendant's instructions. It is clear, however, that the shipping destination of the batteries and components cannot serve as a valid distinction to determine whether or not units come within or without the compensation base. The facts are undeniable that defendant procured the batteries pursuant to a contract executed within this country; the contractor was located within this country; all of the components were packaged within a single carton for delivery to defendant, and all items were thus manufactured

and available for use within the United States. I hold that there was sufficient control exercised by the United States over the use of the infringing batteries ultimately shipped to Okinawa to justify the conclusion that there has been use, as well as manufacture, by or for the United States. Olsson v. United States, 87 Ct. Cl. 642, 25 F.Supp. 495, 37 USPQ 767 (1938), cert. denied, 307 U.S. 621, 650, 41 USPQ 799 (1939). See also Decca Ltd. v. United States, 210 Ct. Cl. 546, 566, 544 F.2d 1070, 1081, 191 USPQ 439, 448 (1976). The use contemplated by the statute is an appropriation by the United States of a right or license secured to a patentee and the employment of the invention to a public purpose or the embodiment of the invention in articles designed and intended for the promotion of a public purpose or undertaking. Olsson, supra, 87 Ct. Cl. at 657, 25 F. Supp. at 498, 37 USPQ at 769. I hold, therefore, that *all* of the batteries and components procured by defendant were procured by or for the United States and therefore are properly subject to this accounting.

Defendant asserts that if 28 U.S.C. § 1498(c) means anything, it stands for the proposition that if the manufacture of a patented device by or for the United States occurs in the United States but use thereof is intended to be in a foreign country, no remedy is available under § 1498(a). To support its view, defendant relies on Deepsouth Packaging Co. v. Laitram Corp., 406 U.S. 518, 173 USPQ 769 (1972), wherein the Supreme Court held that the making and selling of unpatented parts which were shipped overseas and there assembled into a patented combination was not an infringement of a United States patent under U.S. patent laws. Defendant maintains that the Deepsouth case, supra, stands for the statement of law that a patented combination does not exist until it is assembled, and therefore the making or selling of separately unpatented components could not constitute infringement. Defendant maintains that in this case the patented combination is not operative

in its unassembled shipping condition. Finally, the defendant insists that the Court of Claims decision in Olsson v. United States, supra, is not a decision to the contrary.

Plaintiff asserts that the Deepsouth doctrine is inapplicable since it was concerned with the application of 35 U.S.C. § 271(a) which uses the words "makes, uses, or sells any patented invention, within the United States," while the statute presently before the court (28 U.S.C. § 1498) employs the words "is used or manufactured by or for the United States." The plaintiff further argues that the court in Deepsouth held that "makes" requires the complete assembly, while "manufactured for" covers the manufacture of the component parts of a patented device *for* assembly, i.e., it is not necessary that the parts of the device actually be assembled to satisfy the terminology of the statute.

In the present case, the solicitation for bids was made by defendant in the United States. The individual items were manufactured in the United States, for use by the United States, wherever the need might arise. This must be contrasted with Deepsouth where the order originated abroad, and the parts were manufactured within the United States and then shipped to a *foreign concern* located in a *foreign country* for subsequent assembly and use there. In the present case the salient fact remains that the batteries were manufactured *in* the United States and *for* the United States. The final destination of the shipment of the infringing items or the addition of water to activate the electrolyte is of no consequence when the *purchase* has been *by* the United States, *for the beneficial use of* the United States, and where the manufacturing of the components occurred within the United States.

Neither plaintiff nor defendant appears to have comprehended the basic rationale of the majority of the court in Deepsouth, supra. The majority sought to protect the right of a putative infringer to compete with the patent owner

in the *foreign market,* uninhibited by the existence of a valid United States patent. In the present case, defendant has taken from Leesona its domestic market by awarding a contract for the infringing batteries to a domestic company without any intent to *market* the batteries in a *foreign country.*

I hold that all of the batteries and associated components procured by the Government from Eagle-Picher, irrespective of the final destination or use, were manufactured by or for the United States. All such batteries and related components are, therefore, included within the compensation base. Thus Leesona is entitled to recover the sum of $358,883 as the equivalent of a sum which is "not less than a reasonable royalty." This does not, however, constitute "entire" compensation.

V. Multiplication Factor

As previously stated in this opinion, the despicable conduct of defendant leading up to and including the ultimate granting of the procurement contract to an unlicensed manufacturer, with wanton and reckless disregard for Leesona's legal and equitable rights, indicates utmost bad faith on the part of the Government. The plaintiff invented the battery, spent enormous sums of money in successful attempts to militarize the battery, prepared itself for full-scale production at the behest of defendant, and in fact submitted the next-to-lowest bid in the competitive bidding procurement. While the contracting officer may lawfully award a contract to the lowest bidder without regard to patent ownership (a policy which, in and of itself, is counterproductive to the constitutional intent to promote the progress of science and the useful arts), I find that the Government's actions, in other respects, constituted a disgraceful and reprehensible display of bad faith. The offer for competitive bids was issued *after* plaintiff had executed the sole source Letter Contract and had divulged therein the total procurement price which it would accept. That

price became known thereafter to at least one of the bidders who participated in the competitive bidding. As in Tektronix, supra, the ultimate contractor was able to underbid plaintiff on the contract for the patented items since the successful bidder did not find it necessary to include in its bid costs of engineering and development of the battery which Leesona had brought to the quantity production stage.

Statutory authority clearly exists for the increase of damages up to three times the amount found or assessed in civil suits. Where the defendant has knowledge of and copies plaintiff's patented device, infringement of the patent is willful and wanton, and the plaintiff is entitled to have its damages increased up to three times the amount assessed, as prescribed by 35 U.S.C. § 284. Corometrics Medical Systems, Inc. v. Berkeley Bio-Engineering, Inc., 193 USPQ 467, 479 (N.D.Cal. 1977); Feed Service Corp. v. Kent Feeds, Inc., 185 USPQ 745 (N.D. Ill. 1975). It has also been held that where infringement has been intentional and deliberate, damages may be increased under 35 U.S.C. § 284. Big Four Automotive Equipment Corp. v. Jordan, 184 USPQ 80 (N.D. Ohio 1974); Jenn-Air Corp. v. Penn Ventilator Co., 394 F.Supp. 665, 185 USPQ 410 (E.D. Pa. 1975). In the present case there can be no doubt that defendant has exercised the utmost bad faith in its dealings with plaintiff, in addition to its willful and deliberate infringement. In Trio Process Corp. v. L. Goldstein's Sons, Inc., supra, 533 F.2d 126, 189 USPQ 561 (3d Cir. 1976), a case initially tried by a special master, the district judge reduced the damage multiplier from three to two. The plaintiff asserted that the damage multiplier should not have been reduced from three to two since defendant exhibited a *substantial* degree of bad faith in its infringement of the patent. The Court of Appeals for the Third Circuit gave a literal interpretation to 35 U.S.C. § 284 and held that the court is not bound to treble damages found, but may, within its sound discretion, increase damages *up to*

three times the amount found or assessed. Id. 533 F.2d at 131, 189 USPQ at 565. Hartford-Empire Co. v. Shawkee Mfg. Co., 163 F.2d 474, 74 USPQ 252 (3d Cir. 1947). Thus, it is clear that bad faith in infringing a plaintiff's patent can result in multiplication of damages by any factor, *not greater than* three times the amount found or assessed, within the sound discretion of the court. See also American Safety Table Co. v. Schreiber, 415 F.2d 373, 163 USPQ 129 (2d Cir. 1969).

Defendant maintains that it cannot be bad faith for a Government employee to act *in accordance with law or regulations.* Defendant's argument misses the mark. While the contracting officer, in applying current regulations, was obligated to ignore plaintiff's patent rights in awarding the competitive bid procurement contract of the lowest bidder, defendant's *entire course of conduct* in all other respects was permeated with bad faith from the moment it declined to ratify the Letter Contract awarded to Leesona. The facts speak for themselves. Defendant relies on Milton Beatty v. United States, 144 Ct. Cl. 203, 168 F.Supp. 204 (1958), a congressional reference case, in support of the proposition that there is no impropriety in the Government's doing or threatening to do what it had a *legal* right to do. The facts of that case, however, clearly establish that, at all times, the Government was acting in *good faith.* The court specifically noted that they (the Government agents) at least "tried to act fairly." The court there held that it was not duress or bad faith for the Government representatives to threaten to institute civil suits where the threat to do so was made in the honest belief that a good cause of action existed. Id. 144 Ct. Cl. at 206, 168 F.Supp. at 206. That statement is a far cry from defendant's actions in the present case. Without doubt the Government has a right to take plaintiff's patent rights under the fifth amendment in the course of awarding contracts under competitive bidding procedures. Yet, it was the steps leading up to the taking which establishes bad faith on the part of the defendant in this case.

The constant "leading on" of the plaintiff with the knowledge of plaintiff's financial reliance thereon, the issuance of the sole source Letter Contract and defendant's subsequent, albeit legal, refusal to ratify the Letter Contract and use of the fruits of plaintiff's good-faith development of the product, all establish the Government's bad faith in its dealings with Leesona. The bidding process was less than bona fide or fair to Leesona in view of the fact that Leesona's pricing was disclosed in the Letter Contract before the competitors submitted their bids. This should not have been allowed to happen. The contracting officer could have stuck to his original commitment and ratified the Letter Contract *without voiding any law or regulation.* A determination had been made that sole source procurement was in the best interests of the Government. There was no rational basis for reversal of that determination.

A significant hurdle exists, however, before this court can multiply the damages found in an action brought under 28 U.S.C. § 1498(a), even assuming, arguendo, a positive and undeniable showing of the existence of willful, intentional, deliberate, and bad-faith infringement by the Government. The hurdle is surmountable, however, by reading into 28 U.S.C. § 1498(a) the provisions of 35 U.S.C. § 284, which section provides that the court may increase damages *up to three* times the amount found or assessed.

Stated more succintly, the section constitutes a congressional authorization for an increase in damages where the constitutional and statutory patent rights of a party are taken by an act of infringement. The Government is no less an infringer than a private party merely because the Government employs the shield of sovereign power to seize the patent rights and proceed with the infringement, at the same time maintaining its immunity to injunctive relief to prevent infringement. Calhoun v. United States, supra, 197 Ct. Cl. at 51, 453 F.2d at 1391, 172 USPQ at 443, in discussing the issue of the relationship between Title 35

U.S.C. and section 1498 of Title 28, U.S.C., states that: "Although § 1498 resembles, in several ways [footnote 6 omitted], the statutory scheme dealing with the private infringer, it is not wholly on all fours with that other pattern.[7]" Footnote 7 gratuitiously, and as obiter dictum, implies that nothing in Title 35 U.S.C. may be asserted by any party in an action under 28 U.S.C. § 1498 unless there is a "counterpart" expressly stated in section 1498. Using as an example section 284 of Title 35 (which section was not in issue in Calhoun, supra), the footnote states: "For instance, 35 U.S.C. § 284 allows an increase of damages up to three times the amount found or assessed; there is no counterpart under 28 U.S.C. § 1498." Since the issue of applicability of 35 U.S.C. § 284 to actions under 28 U.S.C. § 1498 has not been decided directly by the court in an action in which that section was in *issue,* the dictum quoted above is not considered to be binding in the present case. Therefore, it is concluded that defendant must bear the brunt of the definitions of, and criteria to be applied to, infringers as set forth in Title 35 if it is to also have the benefit of the defenses recited therein.

Knowledge by potential contractors of the "ballpark" bid of another potential contractor, prior to submission of a "competitive" bid, is an extreme and improper advantage. By definition, this knowledge renders the bid "noncompetitive." At the very least, the Government is guilty of bad faith in changing its method of procurement after "letting the cat out of the bag." The Government's bad faith was also evidenced by its issuance of the sole source contract to plaintiff, expressing its then-existing desire to procure the goods from plaintiff and its subsequent withdrawal of the Letter Contract in order that the defendant might gain the benefit of a competitive bid. On *these facts* I hold that *this* case is *exceptional.* Although trebling of damages is permissible, the circumstances surrounding the eminent domain taking by the Government, in this case, are such that

doubling the damages, together with the other relief accorded herein, is sufficient to provide *entire* compensation to Leesona. It is ordered that the damages be so increased.

VI. Attorney Fees

Having held that this is an exceptional case and that attorney fees should be allowed to Leesona,[17] there remains for determination the amount which should be awarded. At the trial of the case, plaintiff proffered, in the form of a recapitulation, figures showing the amounts paid by plaintiff as attorney fees for each calendar year from 1970 through 1976. The sum of those figures is $315,866.47. Inasmuch as the court sustained defendant's objection to the trial judge's ruling on admissibility of that evidence at that stage of the proceedings, the accuracy of validity of the recapitulation was not challenged. Accordingly, it would not be proper to accept the figures at face value in arriving at an amount which would be the equivalent of reasonable attorney fees. Since in all civil cases involving the award of attorney fees the amount is left for determination of the trial judge in the exercise of his sound discretion, a determination is made in this case by only allowing approximately one-third of the amount claimed, i.e., $100,000.

The amount awarded is arrived at from a review of the file of the present case to obtain some feeling for the amount of attorneys' time spent in preparing pleadings filed herein and obtaining the necessary information to prepare the pleadings. Consideration has also been given to the amount of time spent in the separate trials on the issues of liability and accounting.

The petition was filed on April 20, 1970. Answer was filed August 5, 1970. Thereafter protracted pretrial proceedings, including negotiations relating to possible settlement, were conducted. It was not until June 18, 1973 that

[17] See discussion of award of attorney fees in exceptional cases herein at page 19, supra.

trial was commenced. In the interval of almost 3 years several pretrial conferences were held, and hardly a month went by without a plethora of papers being filed by both parties. The 21-day trial held on the liability issue concluded on July 24, 1973. The order closing proof was filed October 10, 1973 after considerable controversy over the contents of the record. Plaintiff's brief and requested findings of fact were filed December 26, 1973. Defendant's brief and requested findings of fact were filed April 1, 1974. Plaintiff's replies were filed July 1, 1974. The opinion, findings, and report of the trial judge were filed February 27, 1975.

Exceptions were taken to the trial judge's opinion and findings, and the case was argued before the court on December 2, 1975. Judgment on the issue of liability was entered in favor of plaintiff on January 28, 1976, and the case was remanded to the Trial Division for determination of the amount of recovery.

In the "accounting" phase, times were set for the parties to file their pretrial submissions after it was ascertained that settlement negotiations were fruitless. Trial was set to commence December 6, 1976. Intensive pretrial discovery was conducted in the fall of 1976, and commencement of trial was postponed to January 4, 1977 to allow for completion of discovery. The trial lasted 4 days. The order closing proof was filed February 3, 1977, and the final posttrial briefs were filed June 27, 1977. A posttrial settlement conference was called by the trial judge to explore the possibility of stipulating the amount of recovery in view of the record and posttrial submissions. The conference was held, but to no avail.

If it is assumed that for each day of trial (25 days) the equivalent of 10 days was spent in preparing pleadings, conducting pretrial discovery, briefing before and after trial, and doing all other things necessary to comply with the Rules and rulings of the court, it will be seen that the

equivalent of about 250 man-days has been spent by counsel for each side. Dividing plaintiff's figure of $315,000 by 250, a quotient of approximately $1,260 per day is computed.

Although $1,260 per day is not considered to be excessive, as patent litigation goes, to avoid any appearance of generosity, a per diem rate of one-third of $1,260, or about $420, would be at least a token award. For convenience in computation, therefore, the sum of $100,000 (approximately one-third of $315,000) is awarded as attorney fees.

VII. Delay Compensation

A. Rate

The "reasonable and entire compensation" due plaintiff under 28 U.S.C. § 1498 is based not only on an amount which is not to be less than a reasonable royalty, but may also include an appropriate amount, in the nature of damages, to compensate plaintiff for defendant's delay in payment of the just compensation. This additional amount is referred to as "delay compensation." Pitcairn v. United States, supra. As established in Pitcairn, the delay compensation *rate* for the years 1966-70 is 6½ percent while the rate for the years 1971-75 is 7½ percent.[18]

Leesona asserts that delay compensation should be calculated at a delay compensation rate of 10 percent. This is the interest rate that it paid on money borrowed at the time of the Government's taking. Leesona maintains that it is not a novice in the field of borrowing money. Therefore, it contends that the fear of the court (expressed in Pitcairn, supra) that plaintiff did not get the lowest prevailing interest rate on the borrowed money, is not warranted.

[18] The rate for the years succeeding 1975 is also 7½ percent unless a different rate is affirmatively established by plaintiff. In Tektronix, Inc. v. United States, Ct. Cl. No. 79-61, decided April 19, 1978 (slip op. at 6), the court affirmed the trial judge's conclusion insofar as he set the rate for the years 1975-80 at 8 percent on the basis of the affirmative showing made therein.

Defendant, on the other hand, asserts (as it did, unsuccessfully, in Pitcairn, supra) that the proper measure of delay compensation is the yield on Government bonds traded in the public market place. This rate, the Government claims, is not what the Government would gain from the transaction, but is a measure of the expectation of the amount of gain expected by a trader, such as Leesona, in the market place. Defendant disregards the fact that Leesona was not in the market for the purchase of Government bonds. To the contrary, it was in the *borrower's* market. Even if it had money to invest, it is not likely that it would seek out Government bonds when freely and competitively marketed AAA corporate bonds were available at higher yields.

The Court of Claims utilized the yield of long-term AAA corporate bonds as the indicator of the delay compensation rate in Pitcairn, supra. I hold that the delay compensation rate should be those rates set down by the court in Pitcairn for the appropriate periods. Furthermore, for all of the years spanning the 1976-80 quinquennium, I hold that the delay compensation rate should be 8 percent. This rate is reasonable in the light of the affirmative showing of the recent yields of AAA bonds. Although the average yield on the AAA corporate bonds during the years 1971-75 (for which period a 7½ percent rate was established in Pitcairn, supra) was only slightly less than 8 percent, the rate rose thereafter and has remained well above 8 percent to the present time. For the purposes of simplified computation and in light of the current rate, I hold that the 8 percent delay compensation rate is the rate to be applied for the years 1976-80. See Tektronix, Inc. v. United States, Ct. Cl. No. 79-61, decided April 19, 1978 (slip op.).

B. Period of Computation of Delay Compensation

Leesona maintains that delay compensation should be computed from the date of execution by the Government of

the contract with Eagle-Picher. Leesona's argument stresses the fact that as of the date the competitive bid contract was awarded to Eagle-Picher, defendant had willfully and knowingly authorized, contributed to, consented to, and actively induced infringement of the claims of plaintiff's patents by the successful bidder. According to precedents Leesona could have sought an injunction to prevent the manufacture of the infringing batteries at that point of time if the infringements had not been on behalf of the United States Government. Defendant, however, being immune from injunction, proceeded with impunity, subject only to the liability imposed under section 1498 of Title 28 U.S.C. Since plaintiff could not have maintained a suit in a district court to enjoin the infringement, the date from which the liability of defendant runs is the date of award of the contract.

By analogy to land-taking cases, the taking of the patent rights of Leesona in this case corresponds to the filing of condemnation proceedings in land-taking cases. It is not analogous to inverse condemnation cases where the time of taking is not easily ascertainable or may be different from the time of actual entry or taking possession by the Government. The issuance of a contract calling for the manufacture of an item for which the specifications spell out a clearcut case of infringement or where the construction of the patented device is to be copied, constitutes actual taking of the patent rights as of the date the contract becomes binding on both parties unless it can be shown that the items actually delivered did not conform to the specifications upon which the holding of infringement is based.[19]

[19] The facts in this case are distinguishable from those in Tektronix, Inc. v. United States, supra n. 18, 193 USPQ 385 n.18, in that there is but one contract and one supplier involved, and the drawings and specifications (which were prepared by Leesona in anticipation of bidding on the contract) left no uncertainty about the *scope* of the interest taken by the Government. There were no change orders to exacerbate the infringement, and Leesona had

The Government contends for a series of later dates from which delay compensation should be computed. More specifically, the Government claims that delay compensation should be computed from the dates the procured items were individually *delivered* to the Government, relying on the method used in Pitcairn, supra. While that may be a feasible basis for computing liability in the case of long-term, multi-supplier and multi-contract procurement, it is not applicable where, as here, there was a "one-shot" procurement and the scope of the interest taken by the Government was *certain* in *all* respects as of the date of award of the contract to Eagle-Picher.

I hold as a matter of law that the first taking occurred on November 6, 1969, the date defendant authorized and consented to the infringement of plaintiff's patents by executing the contract awarded to Eagle-Picher and thereby contributed to and actively induced infringement. It should be clearly pointed out that the issue of the date of taking was decided in Pitcairn, supra, for the purpose of fixing the date from which the statute of limitations was to run, since, as in Irving Air Chute Co. v. United States, 117 Ct. Cl. 799, 93 F.Supp. 633, 87 USPQ 246 (1950), "it was not possible to ascertain the *scope and duration* of the interest taken at the time of the first unauthorized use." Pitcairn, supra, 212 Ct. Cl. at 181, 547 F.2d at 1115, 192 USPQ at 616-617 (emphasis added). The multiple dates from which delay compensation was computed in Pitcairn were consequently controlled by the principle which is applicable only where "the scope and duration of the interest taken at the time of the *first* unauthorized use" cannot be ascertained. In the present case, the *only* taking was that which occurred on the date the contract with Eagle-Picher was signed. Incremental computation based on delivery dates which are not

actual notice of the award of the contract to the infringer at the time the award was made. From that date on, Leesona suffered loss even to the extent of having to abandon its battery business.

ascertained until *after* the fact of infringement is like cutting off the dog's tail inch-by-inch so it won't hurt so much. The scope and duration of the interest taken was accurately measurable as of a single date in the present case. There is, therefore, no distinction between the date of taking for the purposes of the computation of delay compensation and the date of taking for determining the date from which the statute of limitations begins to run in the present case. Where, as in the present case, a one-time procurement is tantamount to a confiscation of *all* of the plaintiff's patent rights, the date of taking is the date of execution of the contract which actively induces infringement of the patents. In other words, the showing in this case is such that injunctive relief would have been warranted as of the date of award of the contract to Eagle-Picher if the issue arose between private litigants under Title 35 U.S.C.[20]

VIII. Conclusion

What might have appeared, at first blush, to be a run-of-the-mill patent accounting case actually is a first-of-its-kind case. While it is not unusual for the Government to barge ahead and award contracts with total disregard for the rights of patent owners, it is, to say the least, reprehensible and inexcusable for the Government to lead a patent owner up to the point of issuing a Letter Contract and then, at

[20] In the event the court, on review, holds that the present case is not distinguishable from Tektronix, Inc. v. United States, supra n.18, 193 USPQ 385 n.18, and that its holding therein is controlling in this case, the computation of delay compensation based on weighted average delivery dates would be $1,183,379.93. The computation of delay compensation using the weighted average delivery date is sufficiently complex to warrant our setting forth the basis for the computation in Appendix C attached hereto. For purposes of compensation, delay compensation computations have also been made on the basis of plaintiff's expected payment schedule had the parties entered into a license of the kind that plaintiff had entered into with others (Appendix A); and on the basis of actual delivery dates (Appendix B).

the very last moment, betray the mutual faith by putting the item out for competitive bidding while divulging the patentee's pricing information to prospective bidders and awarding the contract to an underbidding infringer. This conduct is what makes the infringement willful and deliberate to the extent that damages equivalent to those provided for in 35 U.S.C. § 284 are warranted.

The case is also complicated by the nature of the item procured and the relationship of the infringed claims to the components of that item. This case is comparable to Pitcairn, supra, in that the compensation base in Pitcairn included not only the engines and airframes, i.e., "ready to fly" aircraft, but also included the indispensable spare parts required for continuity of operation of the aircraft. The compensation base in the present case, therefore, includes sufficient anode sets to last for the life of the battery as a "ready to use" item, i.e., up to approximately 50 cycles.

Furthermore, this case presents such a unique display of bad faith on the part of the Government that (as hereby distinguished from Tektronix, supra, and the facts as they existed in the present case at the time of the court's ruling herein on March 4, 1977), Leesona is entitled to recover at least a portion of its attorney fees.

APPENDIX B

Opinion, U.S. Court of Claims, On Accounting, Decided May 16, 1979

U.S. Court of Claims

LEESONA CORPORATION

v.

UNITED STATES

No. 130-70
Decided May 16, 1979

NICHOLS, Judge.

In Leesona Corp. v. United States, 208 Ct. Cl. 871, 530 F.2d 896, 185 USPQ 156 (1976), this court held that certain claims of three patents owned by plaintiff Leesona were valid and infringed by the defendant United States. The issue in this case is the determination of "reasonable and entire" compensation due plaintiff for that infringement under 28 U.S.C. § 1498, i.e., what is called in these cases the "accounting phase." Trial Judge Browne, to whom this phase was assigned under our Rule 131(c), determined that Leesona was entitled to judgment in the amount of $3,534,-753.52, which included attorneys' fees of $100,000 and delay compensation for the period of November 6, 1969, up to and including December 31, 1977. He also ordered additional delay compensation at the rate of $470.51 per day from January 1, 1978, until payment on the judgment. The government has excepted to the trial judge's determination of what items constitute "reasonable and entire" compensation, and to much of the accounting used in the opinion.

Our conclusion is that the trial judge's award is largely excessive because of his erroneous assumption that he was adjudicating a tort claim for patent infringement under

various provisions of Title 35 of the Code. We do not adopt the opinion of the trial judge, although we do adopt the trial judge's findings of fact except as stated. These findings are not printed herein, as the facts necessary to our ultimate determination are incorporated in the opinion. We have made our own determination in the amounts that will appear below. We state by separate order what findings we reject without replacement, and what findings we adopt as corrected by us. Any fact statements not having counterpart in the findings may be taken as additional findings of the court.

I.

A.

The infringed patents relate to mechanically rechargeable metal-air batteries termed BB-626/U's. Each BB-626/U consists of a battery box, a cover, attendant hardware, twenty-two cathode envelope structures, and a can containing twenty-two zinc anodes.

The designs for which a patent has been found to be valid and infringed are (a) a cathode structure with an admixture of catalyst and Teflon binders (patent 3,419,900), (b) a specified arrangement of the cathode, using a Teflon-backed electrode (patent 3,276,909), and (c) a specified relationship of the replaceable anode to the cathode, requiring a minimum volume of electrode; this is the "cathode envelope" concept (patent 3,436,270). In the liability trial, Trial Judge Cooper determined, and we agreed, that the three infringed patents were of substantial importance to the success of the BB-626/U battery, making them lighter, capable of handling more power and at higher power levels, and greatly reducing recharging time. 208 Ct. Cl. at 895, 530 F.2d at 910, 185 USPQ at 166-167.

The operation of the battery is as follows: when packed for shipment, the BB-626/U's have "dummy anodes" in their cathode envelopes; the real anodes are separately

packed in a hermetically sealed envelope. An electrolyte is formed in the cells when the battery is filled with water. Then the real anode is taken out of the storage envelope and replaces the dummy anode, and only when all twenty-two anodes replace the dummy anodes is the battery operative. The battery is recharged by replacing the anodes, and the government anticipated that it would require 50 "recharges," i.e., replacement of the twenty-two anodes, for the battery to be militarily useful. The method of packaging the anodes comes within the scope of a patent to which the United States has a royalty-free, nonexclusive license. Leesona Corp. v. United States, supra, at 894-95, 530 F.2d at 910, 185 USPQ at 166-67.

B.

Leesona, through the Leesona-Moos Laboratories division of the company, was engaged in the development of mechanically reconstructible batteries (the BB-626/U's). It determined to overcome the deficiencies of the then standard electronically "rechargeable" batteries (the BB-451/U's). The company's research was focused on the military potential of such a battery and the patents were considered an important contribution to Leesona-Moos, and to Leesona's diversification program. In 1966, Leesona manufactured and tested batteries under a contract with the government for 22 metal-air batteries, 10 of which were to be mechanically reconstructible. The test performance of the '626 batteries was highly favorable, compared to the standard '451 batteries. Due to the outstanding performance of the '626 batteries, the Marine Corps decided to replace all the BB-451/U's with BB-626/U's. From the information available at the time, Leesona estimated that the value of the Marine Corps' annual procurement of '626 batteries would be in excess of $25-30 million, and that the procurement needs of the Army would be even greater. (Such procurement levels never took place; the parties suggest a variety of factors which may have been responsible—new tech-

nology, the end of the Vietnam War, and the failure of the contractor chosen by the government to make the batteries, Eagle Picher, to deliver a reliable product.) Anticipating a government contract for a large quantity of batteries, Leesona committed over $3 million of its funds to establish full-scale production facilities for the batteries. Given the success of the '626 batteries, Leesona assumed that the patents would be of great assistance in enabling it to maintain a highly competitive position in the battery field. To ensure such a position, Leesona was unwilling to grant any other company a license to manufacture batteries within the United States, although agreements with other corporations do not prohibit the sale within the United States of batteries manufactured outside the United States.

C.

The government's initial procurement procedure for the batteries, the procedure which produced the litigation at hand, was fiercely assailed by the trial judge and in all candor was hardly a model of efficient management and laudable public relations. In April 1969 the Marine Corps requested authority to issue a negotiated letter contract to Leesona for procurement of 2,500 BB-626/U batteries, 753,456 anode-electrolytes, 3,000 cathodes, and 575 "blower" covers. The Marine Corps justified the sole source procurement at that time, declaring that drawings and specifications would be inadequate at the present time for competitive bidding, and that start-up time would delay a bidder other than Leesona. A negotiated letter contract was issued to Leesona on May 12, 1969, for the manufacture of BB-626 batteries and associated components. Unit prices of each component were not fixed then, but the letter contract did give the figure of $3,700,000 as the government's maximum commitment for the items it desired. The same letter contract also limited government liability to $1.8 million in the event of termination.

Leesona received and signed the letter contract. However, after receiving the signed letter contract, the Marine Corps refused to ratify it. The letter contract incorporated ASPR § 7-802.2 (Mar. 1964) which required acceptance by *both* parties before commencement of work. Two other manufacturers had learned of the issuance of the letter contract for the BB-626/U batteries, from sources to which neither defendant nor plaintiff can point with certainty. But upon learning of the government's interest, these manufacturers requested that Invitations for Bids be issued, asserting that they had the potential to manufacture such batteries.

The government decided to withdraw the letter contract. Testimony from the parties' witnesses indicates that there were both economic and legal reasons for doing so. Apparently, one internal report at the Marine Corps suggested that greater cost savings could be effected if a competitive, rather than a sole-source, bid procedure were used. And defendant points out in the government's briefs that the Armed Services Procurement Regulations require procurement by formal advertising whenever such a method is feasible and practical. See ASPR 1-1001, 2-102.1, 3-102(a) (1973).

Leesona assisted the Marine Corps in assembling a data package used to prepare the government's request for bids. There is no indication in the record that Leesona received compensation for this service, nor that Leesona took any steps to identify the confidential nature of the information used in the preparation of the bid package.

Twelve companies were invited to make bids, five did so. The contract was awarded to the lowest bidder, Eagle Picher, Inc., on November 6, 1969. Leesona was the next-to-lowest bidder. Leesona contends that November 6, 1969, the effective date of the government's contract with Eagle Picher (contract No. M00150-70-C-0113), was the date of the government's taking, since on that date the government

induced and contributed to the infringement of Leesona's valid patent by authorizing Eagle Picher to manufacture the batteries using plaintiff's patents.

The contract awarded Eagle Picher required delivery of the following items, with options for technical manuals, progress reports, etc.:

Item No.	Supplies/Services	Quantity	Unit Price
0001	Batteries, BB-626/U Zinc Air mechanically rechargeable	2,138	$385.22
0002	Kits, Anode charge BB-626/U	68,182	26.10
0003	Cells, single, used w/BB-626/U Battery	2,948	14.32
0004	Covers, electronic package used w/BB-626/U Battery	732	90.14

A procurement worth $921,708.03 was added later by the government's exercise of certain options for additional anode kits and cells for the battery. Eagle Picher effected a cost saving on Item 0001, above, so that the unit price of the batteries was reduced to $385.125 from the original $385.22.

D.

Trial Judge Browne awarded Leesona damages based on his view of the scope of 28 U.S.C. § 1498. That statute provides that the exclusive remedy for patent infringement by the government is an action in the United States Court of Claims, and in such an action, the owner of a valid claim is entitled to recover "reasonable and entire" compensation for infringement.

The theory for recovery against the government for patent infringement is not analogous to that in litigation between private parties. When the government has infringed, its is deemed to have "taken" the patent license under an eminent domain theory, and compensation is the just compensation required by the fifth amendment. Title 28 U.S.C. § 1498 contains no directions or limitations as to the grant of damages other than its mandate of "reasonableness" and "entirety." The trial judge's definition of that mandate colors his determination of allowable damages for Leesona. In his opinion, he contends that 28 U.S.C. § 1498 was and is designed as a complete replacement for remedies for private infringement found in 35 U.S.C. §§ 284 et seq. Therefore, he concludes that, at least in such extraordinary cases as this one, parties injured by the government can, under § 1498, obtain treble damages and attorneys' fees, such as private parties may obtain under 35 U.S.C. §§ 284 and 285.

Given this position, Trial Judge Browne determined damages as follows:

He concluded that Title 35 U.S.C. § 284 requires, as a minimum, a reasonable royalty for use made of Leesona's patent. This is to be but one element of the "reasonable and entire" compensation.

To determine this royalty, the trial judge used the contract awarded to Eagle Picher, and the options exercised by the government under that contract, as a compensation base. The value of the initial contract to Eagle Picher was estimated to be $2,667,122.81. This includes the anode kits, cathode cells, and covers requested in the original contract as well as the batteries. Trial Judge Browne did lower the value of the covers from $90.14 to $30 per unit as he considered the high-priced covers unessential for the patented item, although some covers were needed. To this $2.6 million figure he added the additional procurement of anode kits and cathode cells under the contract option. This was valued at $921,708.03. Total government procurement under the contract was thus $3,588,830.84.

The trial judge chose 10 percent as a reasonable royalty level, justifying that figure because of plaintiff's research and development outlays, and its steady protection of its exclusive right to *manufacture* (as opposed to the right to

sell) the batteries in the United States, a right lost when the government authorized Eagle Picher to commence manufacturing the batteries. That royalty level applied to the compensation base results in a royalty of $358,883.

Trial Judge Browne argued that reasonable and *entire* compensation involves more than the "reasonable royalty;" it allows an injured party the same remedies against the government that would be afforded a claimant against a private party, with the exception of the injunctive remedy. Therefore, since up to treble damages are allowed against a private party, Trial Judge Browne doubled the reasonable royalty figure, due to what he termed the government's "willful and deliberate infringement and bad faith," pointing to the procurement procedure discussed above.

He also allowed inclusion of estimated savings to the government—$768,719.10. Leesona's bid was higher, and it was and would be more expensive than the contract with Eagle Picher, he argued, precisely because Leesona's costs included development expenses easily ignored by Eagle Picher, who utilized Leesona's expertise. The savings to the government are the difference between the $4,401,572.42 which Leesona would have received had it been supplier and the $3,632,853.32 Eagle Picher did receive. These savings are savings on all components, including the anode kits and cathode cells in the original contract and those ordered under the government's option contract.

Lost profits in the amount of $660,235.84 were allowed. Trial Judge Browne allowed a 15 percent profit on the project, applying that percentage to the total dollar procurement of Leesona's anticipated contract, $4,401,572.42.

The trial judge ruled that contract preparation costs and the recovery of investment in the contract were not recoverable, citing General Dynamics Corp. v. United States, 202 Ct. Cl. 347 (1973). But he said that Leesona's expenditure of large sums in reliance on the letter contract, and the

government's bungled procurement procedure were good cause for the multiplication of the reasonable royalty, as above.

Thus total compensation equalled $2,146,720.95. The trial judge then computed delay compensation from November 6, 1969. He accepted plaintiff's theory that the injury began when the contract was awarded, not, as defendant contended, as each shipment of batteries was made. Utilizing the approach taken in Pitcairn v. United States, 212 Ct. Cl. 168, 193-97, 547 F.2d 1106, 1120-24, 192 USPQ 612, 620-624 (1976), cert. denied, 434 U.S. 1051, 196 USPQ 864 (1978), the interest rate for delay compensation was determined on the basis of the yield of long-run AAA corporate bonds.

Finally, the trial judge determined that this case was an exceptional one warranting the award of $100,000 in attorney's fees, approximately one-third the cost to plaintiff.

The trial judge's total award in tabular form is printed following the opinion as Appendix A.

II.

A.

The fundamental error of the trial judge is that he has taken 28 U.S.C. § 1498, which is essentially an Act to authorize the eminent domain taking of a patent license, and to provide just compensation for the patentee, and he has converted it to a consent to suit on a tort theory, and the treatment of the United States as a tort-feasor. The trial judge brands the conduct of the United States as "despicable," for doing what it had a legal right to do, says it acted in bad faith, and assesses damages under rarely used punitive provisions for the mulcting of private parties who infringe patent rights in entire bad faith.

Before the 1910 enactment, 36 Stat. 851, the ancestor of the present § 1498, the holder of a patent infringed by the government sometimes could recover in this court on an im-

plied contract theory if he could show he had offered the invention to the government, expecting to be paid, and the government used it, expecting to be called on to pay. E.g., Berdan Fire-Arms Mfg. Co. v. United States, 25 Ct. Cl. 355, 26 Ct. Cl. 48 (1890), aff'd, 156 U.S. 552 (1895). Some other patent infringement cases came to this court on congressional reference, for advisory opinions, but, otherwise, generally the way was hard. In James v. Campbell, 104 U.S. 356, 357 (1882), an injunction suit, the Court stated in dictum that the owner of a patent infringed by the government had a fifth amendment right to just compensation, but the avenues to enforce it were dubious. Possibly officers of the United States could not be enjoined because the United States itself was an indispensable party who had not consented to be sued. The holding there was that the patent was invalid.

The Tucker Act of March 3, 1887, 24 Stat. 505, now 28 U.S.C. § 1491, added a new category to Court of Claims jurisdiction: "claims founded upon the Constitution." In Schillinger v. United States, 155 U.S. 163 (1894), aff'g 24 Ct. Cl. 278 (1889), the majority held that a patent infringement claim sounded in tort pure and simple, where the implied contract theory was not applicable, and, therefore, was excluded from Court of Claims jurisdiction by the tort exclusion. Mr. Justice Harlan, the elder, dissenting, urged that by authority of James v. Campbell, supra, the Schillinger claim was "founded upon the Constitution," and thus was added to Court of Claims jurisdiction by the new Tucker Act language.

The Congress in 1910 thus could have adopted either of two conflicting theories as to the legal nature of a patent infringement by the government where the implied contract theory of relief was inapplicable. It could have adopted the tort theory and consented to suit as on a tort claim. Or it could have adopted the Harlan theory. Whatever ambiguity there may have been in the 1910 Act itself, the

Supreme Court in Crozier v. Krupp, 224 U.S. 290, 305 (1912), clearly construed it as following the Harlan theory. Instead of consenting to suit for a tort, the Act did the following:

> * * * [T]he United States shall be considered as having ratified the act of the officer [who committed the infringement]. * * * The adoption by the United States of the wrongful act of an officer is of course an adoption of the act when and as committed, and causes such act of the officer to be, in virtue of the statute, a rightful appropriation by the Government, for which compensation is provided. * * *

The Court then refers to the power of eminent domain and says the Act exercises that power. It followed that an injunction against the infringement was no longer available, as it had been when the suit was filed, before the 1910 Act.

Thus that statute adopts the infringement as the act of the United States and makes it a rightful exercise of the power of eminent domain. The problem that led to the 1918 amendment is discussed below.

This court has traditionally searched the law of eminent domain for legal precedents and principles to apply in determining the "reasonable and entire compensation" to be granted in a valid infringement action against the government. See, e.g., Tektronix, Inc. v. United States, 213 Ct. Cl. 257, 264, 552 F.2d 343, 346-47, 193 USPQ 385, 388-390 (1977); Calhoun v. United States, 197 Ct. Cl. 41, 51, 453 F.2d 1385, 1391, 172 USPQ 438, 443 (1972).

The trial judge used the language of § 1498 to justify the award of double damages, profits, savings to the government, and attorneys' fees in addition to a reasonable royalty he deemed due plaintiff for infringement. The 1918 amendment to the 1910 Act, the precursor of § 1498, added the words "and entire" after "reasonable" to define the compensation awarded a plaintiff whose patent was in-

fringed by the government. Naval Appropriation Act of July 1, 1918, ch. 114, 40 Stat. 705. The present statute retains that amended language and allows patent owners to sue in the Court of Claims for recovery of "reasonable and entire compensation for such use and manufacture" of an infringed patent. Trial Judge Browne said that that language was intended to expand government liability for patent infringement beyond the award of a reasonable royalty; indeed, an argument was made by plaintiff that the "entire compensation" language was added to compensate for the loss of the injunctive remedy that patentees possess against private infringers. However, the trial judge made no award for loss of injunctive protection as such.

The government argued that the addition of the word "entire" to the language of the statute was meant to underscore the exclusivity of the remedy of suit in the Court of Claims, reversing in effect the decision of Cramp & Sons Ship & Engineering Bldg. Co. v. International Curtis Marine Turbine Co., 246 U.S. 28 (1918), which allowed a patentee to sue a government contractor and enjoin infringement of the patent. That Court held that the 1910 Act only protected infringements in the government's own operations. The legislative history of the amendment, sparse as it is, and the amendment's subsequent interpretation by the courts does support defendant's view.

The sponsor of the 1918 amendment described the amendment as "necessary and urgent," and added that it "would expedite the manufacture of war material." The amendment, he explained, would "prevent the injunctive process from the courts being used to prevent private manufacturers doing Government work. That is the whole change made in the law and the conditions are such as to require that it should be done." 56 Cong. Rec. 7961 (remarks of Rep. Padgett).

Courts interpreting this amendment agree that its primary purpose was to stimulate contractors to furnish war

materials to the government, without fear of becoming liable themselves for patent infringement. Richmond Screw Anchor Co. v. United States, 275 U.S. 331, 343 (1928). This would bolster the government's argument. But plaintiff takes heart from language in Richmond Screw and other cases expressing the opinion that Congress, in passing that amendment, was also accepting government liability for the patent infringement of its contractors, and would ensure that the wronged patentee would obtain adequate compensation for the rights taken from him. Richmond Screw, supra, at 345; see also Waite v. United States, 282 U.S. 508, 8 USPQ 121 (1931), rev'g 69 Ct. Cl. 153, 4 USPQ 387 (1930). However, there is no automatic link between the government's assumption of liability for infringement by its contractors and an intent to allow compensation to the patentee in addition to a reasonable royalty as just compensation. The Supreme Court in Richmond Screw used language emphasizing the "comprehensive nature" of relief under § 1498's predecessor because it was seeking to interpret that statute so as to avoid any doubts about its constitutionality. Thus, any remedy afforded by statute for a taking had to comport with fifth amendment standards. Richmond Screw at 345-46. The nature of the property taken by the government in a patent infringement suit has traditionally been a compulsory compensable license in the patent, and just compensation has in most cases been defined by a calculation of a "reasonable royalty" for that license, or, when a reasonable royalty cannot be ascertained, another method of estimating the value of the lost patent. See, e.g., Tektronix, Inc. v. United States, supra, 213 Ct. Cl. at 265, 552 F.2d at 347, 193 USPQ at 389-390; Pitcairn v. United States, supra, 212 Ct. Cl. at 180, 547 F.2d at 1114, 192 USPQ at 615-616; Calhoun v. United States, supra, 197 Ct. Cl. at 51, 453 F.2d at 1391, 172 USPQ at 443. There is no clear indication that the government intended to assume responsibility for any payment other than the just compensation required by the fifth amendment, and absent an ex-

press assumption of such a duty, no further liability other than that which is constitutionally mandated can be assumed. Schillinger v. United States, supra; United States v. Mescalero Apache Tribe, 207 Ct. Cl. 369, 379, 518 F.2d 1309, 1315 (1975), cert. denied, 425 U.S. 911 (1976). To extend the liability by inference or analogy would do violence to the doctrine of strict construction of the consent to be sued. United States v. Testan, 424 U.S. 392 (1976).

While Richmond Screw dealt with certain constitutional difficulties traceable to the impact of the 1910 and 1918 statutes on existing patent rights, it is to be noted that § 1498 was on the books in substantially its present form when all the patents involved in this case were applied for. In Richmond Screw there were troublesome retroactive changes in the incidents of a patent, much to the disadvantage of the patentee, for, as a practical matter, the loss of injunctive protection was from his point of view very much a change for the worse. There is, however, no attempt in § 1498, as we construe it, to authorize uncompensated expropriation of patents whenever issued.

The trial judge progressed from the conclusion that reasonable and entire compensation meant that the United States was assuming liability for more than the fifth amendment's mandated just compensation, to the view that reasonable and entire compensation included more than a reasonable royalty, the traditional benchmark used to measure just compensation for a taking of patent rights. He concluded that § 1498 was a substitute for Title 35, the section of the United States Code granting remedies to patentees and their assignees injured by private parties. Therefore, he concluded that the remedy of "reasonable and entire" compensation awarded under § 1498 would be defined to include most of the elements of Title 35. The injunctive relief of 35 U.S.C. § 283 could not be awarded, of course, since this court lacks the power to grant such relief.

However, as noted above, it is axiomatic that any suit against the government requires an express waiver of the

government's immunity from suit. Incorporating all of the remedies of Title 35 into § 1498 without the explicit consent of Congress, which certainly could have provided for such incorporation had it so desired, would violate that requirement. This court has already made clear that the foundation and purpose of § 1498 are not completely analogous to those of Title 35. In Calhoun, supra, we said:

> * * * Although § 1498 resembles, in several ways, the statutory scheme dealing with the private infringer [Title 35], it is not wholly on all fours with that other pattern, and we should not disregard the different theoretical basis for the patentee's suit against the Government where that difference impinges on the particular issue. * * * [Footnotes omitted.] 197 Ct. Cl. at 51-52, 453 F.2d at 1391, 172 USPQ at 443.

A complete congruence between § 1498 and Title 35 would grant plaintiff a recovery in excess of the just compensation required by the fifth amendment, and in excess of the reasonable and entire compensation contemplated by Congress with the passage of § 1498. The difficulties with Trial Judge Browne's incorporation of Title 35 into the definition of a § 1498 recovery can be seen in certain elements of the award he granted Leesona.

B.

The trial judge's doubling of damages due to the government's "bad faith" was an award based on the punitive aspects of Title 35. Section 284 authorizes double or triple damages, without express guidelines as to when this is to be done. Cases granting multiplied damages to victims of private infringers have a punitive ring, punishing those infringements characterized as "willful and deliberate." American Safety Table Co. v. Schreiber, 415 F.2d 373, 163 USPQ 129 (2d Cir. 1969), cert. denied, 396 U.S. 1038, 164 USPQ 225 (1970); Coleman Co. v. Holly Mfg. Co., 269

F.2d 660, 122 USPQ 559 (9th Cir. 1959); St. Regis Paper Co. v. Winchester Carton Co., 410 F.Supp. 1304, 189 USPQ 514 (D. Mass. 1976). The award granted by Trial Judge Browne punishes the U.S. Government for its mishandled procurement procedure; such a slap is meant to warn the United States to be less cavalier in the future when dealing with potential contractors and their patents. These additional damages are not based on any estimate of plaintiff's loss. The proper measure in eminent domain is what the owner has lost, not what the taker has gained. United States v. Chandler-Dunbar Co., 229 U.S. 53, 76 (1913). The lesson might be salutary, but it is not one the United States has consented to. In eminent domain it is necessary to protect the public and the compensation must be just as to it. Bauman v. Ross, 167 U.S. 548, 574 (1897). Perhaps the public must be protected against its own officials. An aggrieved party is entitled to receive only reasonable and entire compensation, not more than that. Tektronix, Inc. v. United States, supra, at 272, 552 F.2d at 351, 193 USPQ at 393. Unlike his counterpart in a private infringement suit, he is not entitled to be the recipient of increased damages heaped on other parties as punishment or deterrence.

Even if this was a suit between private parties subject to the remedies of Title 35, we would not affirm an award of multiplied damages in this case. We are mindful of the fact that in private litigation an award of increased damages is within the discretion of the trial judge and not to be disturbed unless there is an abuse of such discretion, American Safety Table Co., supra, E-I-M Co. v. Philadelphia Gear Works, Inc.. 223 F.2d 36, 42, 105 USPQ 402, 406 (5th Cir. 1955), cert. denied, 350 U.S. 933, 108 USPQ 456 (1956). But increased damages are awarded only for a clear showing of willful and deliberate infringement, American Safety Table Co., supra at 378, 163 USPQ at 132; Copase Mfg. Co. v. American Photocopy Equipment Co., 298 F.2d 772, 132 USPQ 87 (7th Cir. 1961).

The trial judge justified a doubling of damages here due to "the despicable conduct of defendant * * * [indicating] utmost bad faith on the part of the Government." To whatever extent the trial judge may have based his conclusion of bad faith on the government's knowing or willful infringement of the patents, the answer is, as we have noted, that the government had the legal right to take the patents, subject to its obligation to pay just compensation for them. This bad faith activity was apparently, as we understand the trial judge, the procurement procedure whereby the government supposedly encouraged Leesona to develop and produce the batteries, then issued and subsequently refused to ratify the letter contract, in that process thus revealing Leesona's "price" to other competitors, and finally obtained the same batteries at a lower cost from Eagle Picher. It is true that the procurement procedure utilized in this case did harm Leesona. After the time and expense it had spent developing the batteries, and negotiating a sole-source contract, other manufacturers did, by statute and regulations, obtain the right to demand an open bid procedure. It was here that Leesona agreed to assist the government in preparing the request-for-bids, although the reason for this assistance is not stated in the record. Leesona was placed in difficult straits. Once having developed a battery marketable for military purposes, the government was perceivably one of the few (if not only) available buyers. Leesona was probably anxious for the bidding to be completed so it could begin to recoup on its investment, and may have decided to expedite matters by helping to prepare the requests, assuming that it alone would be able to meet the required specifications.

While it seems that the procurement procedure did present aspects of unfairness for Leesona, there is no evidence, however mishandled the whole procedure may have been, that the government's activities were a willful and deliberate attempt to violate plaintiff's legal rights and gain the use of the batteries without payment of the development

cost. We could find no evidence of a deliberate government leak of Leesona's bid price or of its known patented processes. In essence, and however clumsily, defendant was attempting to break Leesona's patent monopoly in a manner the law made permissible. The trial judge seemed to have difficulty with the idea that the law accorded the United States rights not conferred on private parties.

It is to be noted that plaintiff's petition does not and never did, and we must suppose could not, contain a count under § 1491 on the implied contract theory such as that followed in Berdan Fire-Arms, supra, or for misuse of intellectual property to benefit a bidder's competitors, as in Padbloc Co. v. United States, 161 Ct. Cl. 369, 137 USPQ 224 (1963). We say this awarding defendant no accolades for its procurement procedures. See also Griffin v. United States, 215 Ct. Cl. 710 (1978), a recent case restating the implied contract rights of one submitting intellectual property for government use.

C.

We also decline to grant the award of attorneys' fees in this case, again emphasizing that this is a punitive award not necessary to provide just compensation for the taking of Leesona's patent rights by the U.S. Government.

By order dated March 4, 1977, in this very case, we informed the parties that—

> In view of this court's precedent and policy, evidence of attorneys' fees and litigation expenses is inadmissible as evidence in an accounting under 28 U.S.C. § 1498 since it is not relevant to the issue of "reasonable and entire compensation." * * * 213 Ct. Cl. 722, 725, 197 USPQ 737, 738.

In that order we informed the parties that the issue of whether attorneys' fees were to be included as part of reasonable compensation had been decided by this court in

Calhoun v. United States, supra, where we emphasized the eminent domain nature of a § 1498 recovery. See also Dohaney v. Rogers, 281 U.S. 362, 368 (1930), where the Supreme Court held that attorneys' fees were not part of just compensation for land taken under eminent domain.

D.

We also disagree with the trial judge's award of lost profits to Leesona. Our concerns here are the authority for award of such damages, and the problem of double counting. Trial Judge Browne cited our opinion in Tektronix, Inc. v. United States, supra, as authority for the award of both items.

With regard to lost profits, he stated that Tektronix would allow award of lost profits only after strict proof that the patentee would have reaped such profits, proof that the patentee in Tektronix lacked. The focus of the Tektronix opinion, though, is whether a reasonable royalty method, acknowledged as the traditional method for determining just compensation for a § 1498 recovery, or some *alternative* method, such as examination of lost profits, ought to be used. In the present case, Trial Judge Browne awarded lost profits not as an *alternative* to the royalty but *in addition* to it. This is not akin to our suggestion in Tektronix that lost profits might be used in some circumstances to measure just compensation.

Our difficulty in determining a reasonable royalty will be discussed below. But assuming such a hypothetical royalty can be estimated, and assuming Leesona had received such a royalty, Leesona's venture would have contained some element of profit. Awarding lost profits in addition to the royalty would be double-counting, and the profits, especially those based on plaintiff's own projection, are over and above the reasonable and entire compensation for plaintiff's loss.

E.

Finally, we refuse, the additional award made to plaintiff based on savings to the government. The estimated savings were based on the difference between Leesona's bid and that of Eagle Picher. We do not dispute, indeed we agree, that savings to the government may be considered in determining reasonable compensation. Its most proper use, as we will develop below, is in estimating what royalty willing buyers and sellers would agree to. It has been done infrequently in the past and generally only when the calculation of a reasonable royalty was difficult. Amerace Esna Corp. v. United States, 199 Ct. Cl. 175, 462 F.2d 1377, 174 USPQ 517 (1972) (dictum); Shearer v. United States, 101 Ct. Cl. 196, 60 USPQ 414, cert. denied, 323 U.S. 676, 63 USPQ 359 (1944); Olsson v. United States, 87 Ct. Cl. 642, 25 F.Supp. 495, 37 USPQ 767 (1938), cert. denied, 307 U.S. 621, 41 USPQ 799, rehearing denied, 307 U.S. 650 (1939). But we find the same difficulty with these additional damages as we do with the lost profits.

First, the trial judge ruled that savings be awarded in addition to a reasonable royalty, not as a substitute measure, as had been suggested in prior cases in this court. See, e.g., Amerace Esna Corp., supra, Olsson, supra. Like the lost profits, then, there is an element of double counting here, in excess of the reasonable compensation to which plaintiff is entitled.

Second, the trial judge awarded Leesona as but one item the total savings accruing to the government as a result of its acceptance of Eagle Picher's bid rather than Leesona's. Even where savings to the government are used as an acceptable measure of just compensation, no court has awarded the total savings to the infringer as just compensation, still less as but a part of just compensation. As this court said in Olsson:

> * * * [Due to the fact that the United States used plaintiff's patent to manufacture certain guns] plaintiff was relieved of the trouble, expense, and responsibility of manufacture and sale. In these circumstances it seems clear that plaintiff's reasonable and entire compensation paid contemporaneously with the appropriation of the use of his invention was only a percentage of the monetary value of the advantages accruing to the United States by reason of such use. The United States was entitled to claim the benefit of a large portion of the value of the savings in cost and other advantages by reason of its assumption of the care, trouble, risk, expense, and responsibility attending the incorporation of the invention in suit into an acceptable design and the manufacture of the guns. * * * 87 Ct. Cl. at 661, 25 F.Supp. at 500, 37 USPQ at 771.

In Olsson, 25 percent of the total savings to the government were awarded to plaintiff; in the present case, this percentage should be higher for reasons to be stated. The court in Olsson made the interesting observation, and one highly relevant to the underlying difference between us and the trial judge in this case, that the award of the entire savings from the infringement to the patentee would be more characteristic of a tort claim than of a suit for reasonable and entire compensation under the predecessor of § 1498. This was done by way of quoting at 659, 25 F.Supp. at 499, 37 USPQ at 770 from one of this court's implied contract pre-1910 patent cases, Wood v. United States, 36 Ct. Cl. 418, 426 (1901) as follows:

> Where a man tortiously infringes, all that he makes or saves by his wrongful act belongs to the patentee. Where he sells a right to manufacture or use his patented invention and sues in contract, his damages are what the defendant expressly agreed to pay or what the license express or implied, is reasonably worth. * * *

To understand the relevancy of the quote, it is also necessary to observe that in Olsson, as often in that era, the

obligation to pay just compensation, when incurred, was spoken of as an "implied agreement." Id. at 659, 25 F.Supp. at 499, 37 USPQ at 770.

III.

A.

Even excluding the lost profits, double damages and savings to the government that were included by Trial Judge Browne as compensation items to Leesona, the disparity between defendant's suggested royalty figure—$12,349.46—and the amount urged by plaintiff and the trial judge—$358,883.08—is still wide. Defendant suggests that a royalty of 1½ percent be imposed on a compensation base consisting of the amount the Marine Corps agreed to pay for the batteries ordered after Eagle Picher's successful bid. Defendant excludes from the compensation base unpatented anodes, cathodes and blower covers that were part of the initial procurement from Eagle Picher of November 6, 1969, as well as the anodes and cathodes ordered from Eagle Picher by the government's exercise of contract options for additional procurement.

Plaintiff's compensation base, not unexpectedly, includes all of the initial procurement from Eagle Picher as well as the anodes and cathodes ordered by the government from Eagle Picher under the option agreement that was part of the contract. Plaintiff's base is $3,588,830.84, and its suggested 10 percent royalty gives plaintiff an award of $358,883.08. These awards exclude delay damages, which will be discussed later in the opinion.

Fortunately for this reviewing court, we are not required to accept as dogma one of the parties' figures or the other, but can use them as perimeters for our ultimate determination. The Conqueror, 166 U.S. 110, 131 (1897); United States v. Northern Paiute Nation, 183 Ct. Cl. 321, 346, 393 F.2d 786, 800 (1968). The task of determining a figure that renders just compensation is made even more difficult because plaintiff's theory of the case determined its collection and presentation of the evidence during the accounting phase of the trial. Plaintiff's presentation emphasized that when the government infringed the patents, Leesona Moos Labs found itself in the position of having spent a great deal of money to acquire technical and manufacturing capabilities for the production of its special batteries, but having little chance to enter the battery market in the future. Plaintiff's evidence placed scant emphasis on the actual value of the infringed patents to Leesona, which is what we must determine under § 1498, and more on the total loss suffered by the entire corporation as a consequence of losing both the exclusive domestic manufacturing rights and the procurement contract which was to usher Leesona into the battery manufacturing field. Just compensation in eminent domain does not recompense such injury. United States v. General Motors Corp., 323 U.S. 373 (1945). Some elements of business injury might be weighed in determining what the owner might have sold for, if willing to sell, as is developed in the same case. Plaintiff's injury here far exceeded even its own estimate of a reasonable royalty, and as pointed out above, the tort theory under which such injury might be compensable was not applicable in a § 1498 taking case. There is a difference between evaluating the value of the property taken in light of plaintiff's business needs, and granting compensation for loss of business due to the taking, or for any incidental losses. The former is proper, the latter is not. Gulf Refining Co. v. United States, 58 Ct. Cl. 559, 577 (1923). That case neatly illustrates the proposition. The property taken was tank steamers; plaintiff was an oil company; business injury to plaintiff was not for consideration, but the fact that plaintiff as an oil company could put the tankers to more profitable use than other conceivable owners, was.

Past decisions have utilized a number of methods for determining just compensation in patent cases: a comparison

of royalties charged others by the injured party for rights in the same or similar patents, Calhoun, supra, at 55-56, 453 F.2d at 1393, 172 USPQ at 444-445; a determination of a royalty by postulating hypothetical negotiations between a "willing buyer" and "willing seller," Georgia-Pacific Corp. v. United States Plywood-Champion Papers, Inc., 446 F.2d 295, 170 USPQ 369 (2d Cir.), cert. denied, 404 U.S. 870, 171 USPQ 322 (1971); Tektronix, Inc., supra; basing the award on lost profits, Imperial Machine & Foundry Corp. v. United States, 69 Ct. Cl. 667, 5 USPQ 332 (1930); or savings to the government, Olsson, supra.

The comparative royalty technique is the preferred method of determining just compensation. Carley Life Float Co. v. United States, 74 Ct. Cl. 682, 13 USPQ 112 (1932). This is the method best suited to our needs and the facts available to us, although it is not perfect, and its flaws will be illustrated by our apparent difficulties in applying it to the facts of this case. However, one way to monitor the reasonableness and fairness of our determination of just compensation is to compute the award by estimating a reasonable royalty on a proper compensation base, and then test this award by an examination of other available measures—savings to the government, lost profits, etc. Cf. United States v. Northern Paiute Nation, supra. In a sense, we are taking a leaf from our practice under the Renegotiation Act, 50 U.S.C. app. § 1213, where we are required by statute to take certain factors such as risk and efficiency, into account when determining the reasonableness of profits. Tool Products Co. v. United States, Nos. 32-72, 445-73, and 281-74 (Ct. Cl. Dec. 13, 1978), Major Coat Co. v. United States, 211 Ct. Cl. 1, 543 F.2d 97 (1976). After a tentative determination, in renegotiation cases called a "starting point," we test it with factors such as savings and profits, as guidelines—none totally controlling but all testing our determination of the reasonable royalty and compensation base.

B.

There are two questions to be answered in determining the compensation base to which the royalty should be applied: (1) ought the original equipment anodes, cathodes, and "blower covers" be included in the base; and (2) should the extra anodes and cathodes supplied to the government by its exercise of an option for additional procurement be included? The issue is whether these items should be included as part of the base even if independently they do not infringe plaintiff's patents.

The government argues that all these additional items are "spare parts" that fall within the confines of "permissible repair" as expounded by the Supreme Court in Aro Mfg. Co. v. Convertible Top Replacement Co., 365 U.S. 336, 128 USPQ 354 (1961) (Aro I). Plaintiff maintains that since the contested items derive their utility and value from the patented invention (the battery), and since they are necessary for the battery's operation, they are includable in the compensation base under the "entire market value rule," to be discussed below.

The government bases its argument on the distinction made between repair and reconstruction. The rationale for the doctrine of permissible repair is that one who has bought a patented item can repair and maintain it with nonpatented staple items because the protection and financial rewards of the patent laws would be overextended if they embraced fungible component parts which are independent of the patent. Only when a patented item is "reconstructed" is it infringed. In Heyer v. Duplicator Mfg. Co., 263 U.S. 100, 101-02 (1923), the Supreme Court said:

> * * * The owner when he bought one of these machines had a right to suppose that he was free to maintain it in use, without the further consent of the seller, for more than the sixty days in which the present gelatine might be used up. * * * The machine is costly, the bands are a cheap and common article of commerce. * * *

See also El Dorado Foundry, Machine & Supply Co. v. Fluid Packed Pump Co., 81 F.2d 782, 28 USPQ 436 (8th Cir.), cert. denied, 299 U.S. 560 (1936).

The Supreme Court in Aro I, supra, held that a licensee as well as a purchaser had the right to repair a patented item. And in Calhoun v. United States, 197 Ct. Cl. at 51-52, 453 F.2d at 1391, 172 USPQ at 443, this court made it clear that when the United States takes a compulsory compensable license in a patent by eminent domain, the United States is to be treated as a licensee entitled under Aro I to benefit from the doctrine of permissible repair.

Trial Judge Browne relied on the entire market value rule to justify inclusion of the anodes, cathodes, and blower covers in the compensation base. He analogized those items to the "plug-ins" in Tektronix. In Tektronix, this court included the plug-ins in the compensation base because even though they were separate and unpatented items, they were financially dependent on the market created by plaintiff's patent (for oscilloscopes); thus, plaintiff's patent substantially created the value of the plug-ins.

The government in the present case disagrees with this court's analysis, and especially with its reliance on Marconi Wireless Telegraph Co. v. United States, 99 Ct. Cl. 1, 53 USPQ 246 (1942), modified on other grounds, 320 U.S. 1, 57 USPQ 471 (1943). In Marconi, the patent dealt with tuning apparatus. The issue was whether component parts of the electrical apparatus (transmitters, detectors, and amplifiers) could be included in the compensation base, even though they were not directly responsible for the tuning. Marconi allowed their inclusion, but did not allow inclusion of "replacement parts for such things as experience had shown might be destroyed during normal use of the set." 99 Ct. Cl. at 55, 53 USPQ 246.

We do not think that the discussion of "replacement parts" in Marconi alters the meaning of the entire market value rule; indeed, replacement parts as such are distinguished from components which derive their existence and value from the patent. We think the application of the entire market value rule in Tektronix was correct, and that it is especially germane to this present case. In Tektronix, the plaintiff had patents to components of superior oscilloscopes which were purchased by the government in substantial numbers. To obtain alternative sources of supply (and at a better price), the government invited other manufacturers to bid on a contract to manufacture such scopes, and tailored its specifications virtually to require opposing manufacturers to infringe plaintiff's patents. An opposing manufacturer underbid Tektronix, and the government accrued substantial savings, not only on the oscilloscopes, but also on the unpatented plug-ins used with the scopes.

Under the entire market value rule, it is not the physical joinder or separation of the contested items that determines their inclusion in or exclusion from the compensation base, so much as their financial and marketing dependence on the patented item under standard marketing procedures for the goods in question. In Tektronix, we emphasized that "[n]ormally the patentee (or its licensee) can anticipate sale of such unpatented components as well as of the patented scopes." 213 Ct. Cl. at 272, 552 F.2d at 351, 193 USPQ at 393. We cited American Safety Table Co. v. Schreiber, 415 F.2d 373, 163 USPQ 129 (2d Cir. 1969), cert. denied, 396 U.S. 1038, 164 USPQ 225 (1970), a private patent infringement and accounting case. There, "tables," frames for a collar-pressing machine not covered by the patented die assembly which rested, unattached, to the frames, were included in the compensation base for the calculation of lost profits, even though some tables could be and were sold separately from the infringed die assemblies. The district court noted that the defendant had sold tables to those who had previously bought the die assemblies, and that defendant's infringing sales had created the market for those tables, so that the situation became analogous to that where the tables were sold as part of a complete machine.

American Safety Table depended in turn on the Supreme Court case of Hurlbut v. Schillinger, 130 U.S. 456 (1889), where the patent involved was the technique for laying concrete pavement in detached blocks so that repaving or removal of one section would not affect others. The Supreme Court allowed plaintiff to recover the entire profit earned by defendant by the latter's laying of the concrete pavement, since "the pavement itself was a complete combination in itself, differing from every other pavement, and the profit made by the defendant was a single profit derived from the construction of the pavement as an entirety." Allowance of this profit was based on the fact that "it clearly appears that the defendant's concrete flagging derived its entire value from the use of the plaintiff's invention, and that if it had not been laid in that way it would not have been laid at all." 130 U.S. at 472.

We think that a situation similar to that in American Safety Table and Hurlbut exists in the present case; indeed, as in Tektronix, the entire market rule applies even more strongly because of the government's procurement practice, and because of the nature of the invention. Here it was standard government practice to order the anodes, cathodes, and covers with the batteries as part of one procurement "package." It is not unlikely that plaintiff anticipated additional income from such parts when it estimated the value of the patents. These parts, while not patentable, were designed to operate in conjunction with this special battery; Trial Judge Browne found that they were not staple items (Finding 20) indeed, they had to conform to the specifications in the contract.

It is true that the design of the battery anticipates that many anodes will be necessary to keep the battery in operation. To operate on a normal "life cycle," it was anticipated that the 22 anodes for each battery would each be replaced 50 times. But the battery's very uniqueness lies in the fact that it uses a device like replacing anodes to be

recharged, instead of relying on a cumbersome recharging device. In fact, the separability of the anodes is the key to the battery's value. In addition, the fragile nature of this special battery made it imperative that there be extra cathodes and covers to avoid a situation where damage would occur in the field, and the battery become useless because no cathodes or covers were available.

We recognize that Leesona could not prevent Eagle Picher from manufacturing and selling anodes, cathodes, and covers for a metal-air battery. But the point is that the Marine Corps wanted a mechanically rechargeable air battery and established specifications for such a battery. The government was not merely buying a battery. It was buying a mechanically rechargeable battery, and to be so rechargeable the anodes were needed. It was buying a battery designed to be useful in ground combat, and additional cathodes and covers might be considered necessary in the first procurement. Thus, the initial procurement was a "package" of 2,138 batteries and the additional parts necessary to make the batteries useful for military combat. It is not unlikely that the government would be buying the batteries and the additional components as one unit—they could be packaged and shipped together, as Eagle Picher's were, and one manufacturer would be responsible to the government for the battery's operation. Most importantly, however, Leesona's patents were needed to manufacture the battery cell, and without this battery no anodes, cathodes, or covers would be required. Therefore, it is likely that if Eagle Picher desired to manufacture the batteries for the government and obtained a license from Leesona for that purpose, the license fee would be quite stiff because the right to manufacture the battery brings with it a market for and likelihood of obtaining the right to supply the initial set of anodes, cathodes, and covers. See Paper Converting Machine Co. v. FMC Corp., 432 F.Supp. 907, 195 USPQ 123 (E.D. Wisc. 1977).

This does not mean that we will disregard the doctrine of permissible repair, and allow the patentee to postulate the right to supply anodes, cathodes, and covers ad infinitum to the government. Our problem is to define *when* the government is procuring the necessary parts for the battery to operate initially, and when the government is procuring additional parts. This determination is difficult since we are dealing with a new and relatively unused product which, to be initially operable and militarily useful, depends on a number of parts. The government itself was uncertain as to what constitutes a fully workable battery, and as to how many anodes, cathodes, and covers were needed to get an acceptable "lifetime's" worth out of the original 2,138 batteries. Therefore, we will use the original procurement as a reasonable estimate as to what parts were vital to the operation of the 2,138 batteries, and assume that the option contract was activated to procure "spare parts" which cannot be part of the compensation base.

Including in the compensation base the parts, including replacement parts, obtained with the original procurement, but excluding the additional parts obtained later under option clauses, the compensation base is $2,667,122.81.

C.

Having defined the compensation base, it is now necessary to determine a reasonable royalty. Given the facts available for our use, we will establish a royalty rate by comparing other rates charged by Leesona for use of its patents, with adjustment for the special circumstances of this case. In doing so, we agree with Trial Judge Browne in both his methodology and with his ultimate conclusion as to the reasonable royalty due Leesona in this case.

The government suggests a 1½ percent royalty as reasonable. It bases this figure on two factors. RCA's 1½ percent licensing rate on its magnesium perchlorate battery

patent, and on plaintiff's own licenses, which show royalties ranging from 1½ to 5 percent.

We agree with the trial judge that none of the licenses discussed in the record are based on a situation directly comparable to the case at hand. First, we cannot compare plaintiff's licensing policies with those of RCA. RCA is a corporate giant, and no part of its present or future business depended directly on battery production. Compare Leesona, which had intended to use the Leesona Moos Labs and its patents as a springboard for entry into the battery manufacturing business. Therefore, the worth of Leesona's patents to Leesona is much greater than that of RCA's to RCA. See Tektronix, Inc., supra, 213 Ct. Cl. at 266, 552 F.2d at 348, 193 USPQ at 390-391.

Defendant also points to plaintiff's licensing agreements with others. Again, the situations are not comparable. Until Leesona had lost its exclusive right to manufacture batteries in the United States because of the government's infringement, it never granted any party the right to manufacture metal-air batteries domestically, although some licenses did allow sale within the United States of batteries manufactured abroad. Defendant argues that the 5 percent fee charged for foreign licenses includes more patents than the three in this suit, and that therefore the 5 percent is too high. But the number of patents involved in a licensing agreement is not the material factor in determining the license's worth; it is the value of the rights embodied in those patents. Leesona did not wish to give up its right to exclusive domestic manufacturing; it would have charged a high fee for a license that in effect would surrender its manufacturing exclusivity. Though we make an assumption contrary to fact in casting Leesona hypothetically in the role of a willing seller, we still assume the seller is Leesona, with Leesona's congeries of special interests.

Our focus on the special value to Leesona of the patents taken by the government is justified under the law of emi-

nent domain. The just compensation to which an owner is entitled when his property is taken by eminent domain is regarded in law from the point of view of the owner of the right and not from that of the taker. United States v. Chandler-Dunbar Co., supra; Monongahela Navigation Co. v. United States, 148 U.S. 312, 344 (1893); 3 Nichols, Eminent Domain § 8.61 (3d ed. 1977).

Gulf Refining Co. v. United States, supra, illustrates how the special value to the owner may influence an award above the going market rate. Monongahela Navigation Co. had, besides the tangible property the government took, a franchise it did not take and did not want, which added to the profitability of its land. *Held,* the profitability of the land due to the franchise was an element that had to be considered. In Old South Ass'n v. Boston, 212 Mass. 299, 99 N.E. 235 (1912), land taken was while in plaintiff's hands tax exempt, but not while in anyone else's. *Held,* $25,000 added to award for value attributable to the tax exemption.

So it is with these batteries. The special value of the exclusive manufacturing rights, their importance to the diversification plans of Leesona, made their worth much greater and thus the hypothetical royalty charged by Leesona would have been much higher.

Therefore, in light of the unique value of plaintiff's patents to its business, we agree with Trial Judge Browne that a royalty of 10 percent is justified in this case. We recognize that this is not a perfect approximation; rather it is a type of "jury verdict," which we must estimate as best we can in the absence of hard proof warranting use of more precise criteria. Tektronix, supra, 213 Ct. Cl. at 271, 552 F.2d at 351, 193 USPQ at 393.

As noted earlier, we can attempt to test the reasonableness of our 10 percent royalty by comparing it with other available tests. Note that a 10 percent royalty on a compensation base of $2,667,122.81 gives plaintiff an award of $266,712.28.

Compare this $266,712 figure to the alleged savings to the defendant on the initial procurement. One can estimate the *total* savings the government achieved by obtaining the difference between what it paid Eagle Picher and what Leesona bid on the battery contract. On the initial procurement, the government agreed to pay Eagle Picher $823,-397.25 for the batteries, $1,779,550.20 for the anodes, $42,215.36 for the cathodes, and $65,982.48 for the covers. Trial Judge Browne reduced this final figure when estimating the compensation base, as he argued that standard covers were only worth $30/cover instead of the $90.14 Eagle Picher charged. But we kept the $90 figure for our estimate of savings to the government, as this is the amount the government did pay Eagle Picher. This totalled $2,711,145.29.

Leesona bid $3,301,179.32 on the contract. Granted, there could have been some cost adjustments in Leesona's contract as there were in Eagle Picher's, but for our purposes we will assume none would have occurred. The difference between Leesona's bid and Eagle Picher's contract is $590,-034.03. This can be said to represent the total savings to the government as a result of using Eagle Picher rather than Leesona.

The record is barren of specific evidence that defendant in evaluating the bids gave any consideration to the fact that Leesona owned the patents and Eagle Picher did not. However, the point could not have been overlooked. We must assume defendant was aware that an award to Leesona would avert litigation while an award to Eagle Picher would assure it. The conclusion is irresistible that defendant as a hypothetical willing buyer of a license to make and use the patented invention would not have paid over $590,034.03 applicable to this procurement. Such a license, at that cost, would have made the award to Eagle Picher exactly as expensive overall to the taxpayer as an award to Leesona. As defendant decided that the award to Eagle Picher was the most advantageous, the conclusion is inevi-

table that it would have valued the license at under $590,034.03, and therefore, its liability in the inevitable lawsuit at a lower figure also. Thus the figure is a ceiling on the awardable royalty, but not a floor.

In Olsson v. United States, supra, one-fourth of the savings to the government were awarded plaintiff. That was a case where the inventor could not have manufactured the articles and defendant had to undertake doing so, with all the risks and expenses incident. In this case, research and development costs were required not only for the battery patent, but for a battery patent tailored to the specifications of the United States Marine Corps. Therefore, it would not be unfair to estimate that about one-half of the savings to the government in this case were due to the fact that Eagle Picher had no research costs and Leesona bore them all. One-half of $590,034.03 is $285,017.01—close to the compensation base of $266,712 we obtained by use of a reasonalty royalty method. This is half what a tort theory award based on savings might be, and twice the portion given in the less appealing circumstances of the Olsson case.

A floor on the royalty would be provided by the expense incurred by Leesona in developing its invention, less any compensation received from defendant in its pre-1969 development contracts. The figure, with a reasonable profit, could be amortized by the royalty attributable to the Eagle Picher procurement in the proportion such procurement bore to the anticipated sales of the invention during the patent life. In 1971 plaintiff estimated its "battery development costs" as $1,700,000 in 1968 and $1,870,000 in 1969. This included development of manufacturing technique and facilities, not strictly research and development on the invention only. However, as we have said, plaintiff valued the patents largely for their capability to channel the flow of manufacturing orders to Leesona, so it is not reasonable to suppose that as a willing seller of patent licenses, Leesona would have ignored any part of its "battery development costs." The award of a royalty here must allow

amortization of a reasonable portion of "battery development costs." But Leesona as late as September 1971 projected a sale of battery units to the military only starting at 3,800 in 1971 and rising gradually to 30,000 in 1980. A willing seller of a license covering the Eagle Picher procurement of 2,138 units would not have expected to amortize the whole or a major part of the "battery development cost" out of the royalty on that one procurement. We are unable to say that a 10 percent royalty is not adequate in view of the above circumstances. The loss of the greater part of the "battery development costs" with other losses, might possibly be recoverable as business injury on a tort theory (though we do not so hold), but it is manifestly not recoverable on the eminent domain theory under which the present claim is prosecuted.

If awarded the sole source contract originally proposed, plaintiff would have had to submit cost data to defendant which would have shown the amount allocated to amortization of battery development and would be priceless evidence here. They were prepared to show a total figure of $3,700,000, according to testimony. There is no evidence how much of this was estimated allocable to the contract. When required to compete, plaintiff cut its bid to reflect no more than the prices at which it would be able to sell when it was through the learning curve and in full volume production. In other words, it would have realized a loss on this initial procurement alone. The original sole source prices as proposed presumably reflected high start-up costs and perhaps a more liberal amortization of development cost. But we have no breakdown, no details. In Tektronix, supra, it was possible to estimate the infringer's costs and profits though partly by the loose mode of attributing to it the plaintiff's known costs. Here, no computation of that kind is made possible by the record before us.

The award of a 10 percent royalty on a royalty base of $2,667,122.81 results in a figure, before delay damages, of $266,712. This may quite possibly be less than plaintiff

could be shown to be entitled to. Unhappily, the lengthy record in this accounting phase of the case is dominated by plaintiff's and the trial judge's pursuit of a large award, attempting to make good the injury to business on a tort theory, wholly inadmissible in eminent domain. To award plaintiff even as much as we do, it has been necessary to search the record for evidentiary clues as to the fair market value of the license taken, which have found their way there without much help from the plaintiff. Any amount properly awardable, with the missing facts fully developed, would be but a small fraction of what is claimed. Here, as in our renegotiation cases, the party having the burden of proof must suffer if a scantiness of record fails to support a fully informed and reasoned determination.

IV.

Finally, plaintiff is entitled to damages for defendant's delay in payment of a reasonable royalty for use of its invention. See Waite v. United States, 282 U.S. 508, 8 USPQ 121 (1931).

We do not calculate the delay damages from the date that the Eagle Picher contract was executed, as did Trial Judge Browne. No taking of plaintiff's contract rights occurred on the day of contract execution, unless a tenable argument could be made that the government used Leesona's patents in inducing infringement on that day. However, this court in Pitcairn stated that unauthorized use of a patent item by the government did not constitute a taking of plaintiff's invention for once and for all; rather, "[t]he takings occurred whenever the Government procured or used a device covered by any of plaintiff's patents without a license." Pitcairn, supra, 212 Ct. Cl. at 181, 547 F.2d at 1115, 192 USPQ at 616-617. And Tektronix explicitly rejected the use of the contract execution date as the date the government "procured" an infringing device. The contract execution date was rejected because first, the scope of the interest appropriated by the government at that time might be uncertain,

and, second, the use of the execution date as a "date of taking" might present problems if the infringement went undetected until later manufacture or use, since the statute of limitations would run, see Irving Air Chute Co. v. United States, 117 Ct. Cl. 799, 93 F.Supp. 633, 87 USPQ 246 (1950). Finally, it is unreasonable to assume that the infringing items were manufactured or used before the contract was executed. Tektronix, Inc. v. United States, 216 Ct. Cl. , , 575 F.2d 832, 836-37, 198 USPQ 378 (1978), cert. denied, Dec. 11, 1978.

Plaintiff argues that this is a special case, because the taking was a taking of plaintiff's exclusive right to domestic manufacture of the air batteries, and that such exclusivity was lost on the date Eagle Picher was authorized to manufacture the batteries, and thus infringe plaintiff's patents. But the problem is that § 1498 does not provide compensation for the loss of exclusivity, only for the manufacture or use of an item by or for the government. Although we can and do heavily stress the importance of exclusivity when determining the applicable royalty rate, we cannot say that § 1498 provides compensation for its loss independently of the statutorily defined bases for compensation. Also, assuming that the government had been licensed to use the patent, it normally would have paid royalties on or after the *delivery* of the batteries.

Eagle Picher's deliveries to defendant began on April 14, 1970, and ended on February 1, 1971.

We choose a weighted average delivery date of July 30, 1970. At this time, a little over one-half of the value of the deliveries had been made to the government. With proper compensation estimated at $266,712.28, we calculate the delay damages as indicated by Appendix B. They total $171,239.95 for July 30, 1970 through December 31, 1978, with additional compensation at $58.46 per day from January 1, 1979, until payment on the judgment.

Conclusion of Law

Therefore, we determine that Leesona Corporation is entitled to $266,712.28 as compensation for the taking of its patent rights in the metal-air batteries BB-626/U's. It is also entitled to delay damages of $171,239.95 from the average delivery date of July 30, 1970, through December 31, 1978, with additional compensation of $58.46 per day from January 1, 1979, to the day of payment of the judgment. Judgment is entered accordingly.

Appendix A

(a) Basic Compensation Base: $3,588,830.44 (after allowable deductions) Rate: 10%		$ 358,883.00
(b) Recapture of Research and Development Costs (Difference between amount Leesona would have received if it were awarded contract and actual Eagle Picher, Inc. receipts.)		768,719.10
(c) Lost Profits (15% of Total procurement if Leesona were awarded contract)		660,235.85
(d) Recapture of Capital Investment and Contract Preparation Costs (Not Recoverable)		0.00
(e) Savings to the Defendant Resulting from Efficiency, etc. (Taken into account in (a) above.)	0.00	
(f) Multiple Damages — Willful and Deliberate Infringement and Bad Faith (Additional Sum Equal to Basic Compensation = Double Damages)	358,883.00	
(Noted from original text of decision)		
Total Compensation (Exclusive of Delay Compensation)		$2,146,720.95
(g) Delay Compensation (From November 6, 1969, date of taking, to December 31, 1977, at applicable quinquennial rates.)		1,288,032.57
(h) Attorney Fees (approximately one-third of amount claimed)		100,000.00
Total Reasonable and Entire Compensation (to December 31, 1977)		$3,534,753.52
(i) Daily Delay Compensation Rate (from January 1, 1978 to Date of Payment of Judgment.)		$ 470.51

Appendix B

Calculation of Delay Damages

	No. of Years	×	Percentage	×	Compensation Base		
A—July 30 to Dec. 31, 1970	.416		.065		$266,712.28	=	$ 7,211.90
B—Jan. 1, 1970 to Dec. 31, 1975	5.0		.075		—	=	100,017.10
C—Jan. 1, 1976 to Dec. 31, 1978	3.0		.080		—	=	64,010.95
							$171,239.95

Calculation of Daily Delay Damages from January 1, 1979, to Payment of Judgment

Percentage	×	Compensation Base	÷	Days		
(.08		$266,712.28)	÷	365		
	$21,336.98		÷	365	=	$58.46

Total Delay Damages: $171,239.95 plus $58.46 per day from January 1, 1979, to payment on judgment.

Kashiwa, Judge, concurring in part and dissenting in part.

I concur with the majority in its reversal of the trial judge on the underlying theory of plaintiff's relief under 28 U.S.C. § 1498 (1976). The grounds for reversal by the majority are well stated in subparagraphs A, B, C, D, and E of part II of the majority opinion. I also agree with the majority views with relation to plaintiff's recovery due to delay in payment expressed in part IV of the majority opinion.

I respectfully dissent from the majority view of damages to be awarded in this case expressed in subparagraphs B and C of part III of the majority opinion.

The majority in subparagraph A of part III states:

> The comparative royalty technique is the preferred method of determining just compensation. Carley Life Float Co. v. United States, 74 Ct. Cl. 682, 13 USPQ 112 (1932). This is the method best suited to our needs and the facts available to us, although it is not perfect, and its flaws will be illustrated by our apparent difficulties in applying it to the facts of this case. * * *

The reason it is difficult to apply the comparative royalty technique to the facts of this case is that during the accounting trial plaintiff did not contend it was entitled to a reasonable royalty. Rather, it presented the solitary and novel theory that because it did not receive the procurement contract, the loss of funds that would have been paid to it under such contract caused it to decide to close the Leesona-Moos Division which, in turn, caused the loss of its investment in metal-air batteries. This novel theory was completely rejected by even the trial judge, and the trial judge decided the case on his own grounds. But the trial judge's own grounds were thoroughly rejected by the ma-

jority in subparagraphs A, B, C, D, and E of part II of the majority opinion, as above mentioned. Plaintiff simply did not submit proper proof of damages to prove its case.

Defendant, on the other hand, argued for the award of a reasonable royalty and proved that in four licenses involving the patents in suit, or their foreign counterparts, plaintiff received a 5 percent royalty. It was shown that these licenses also included know-how and additional patents. Furthermore, defendant also proved that in a tripartite license involving two of the patents in suit, plaintiff received only a 1½ percent royalty. This latter license concerned a joint effort to develop technology relating to fuel cells. In addition, defendant presented evidence that RCA had negotiated a commercial license for a patent on magnesium perchlorate batteries used to power military radios for a 1½ percent royalty rate.

The majority has attempted to rescue plaintiff's case in subparagraph B and C of part III by awarding plaintiff $266,712 on an entire market theory. I cannot see how such a theory can be adopted in the present case in that the trial judge found:

> 5. The packaged anodes, per se, prior to installation in the batteries, come within the scope of the claims of plaintiff's United States Patent 3,531,327, under which defendant has a royalty-free, non-exclusive license. When put to use in the batteries, the packaged anodes constitute indispensable elements of the infringed claims of the patents in suit.

This court found that such a license from plaintiff to defendant existed in the first Leesona case, 208 Ct. Cl. 871, 894, 530 F.2d 896, 910, 185 USPQ 156 (1976). Plaintiff has not objected to the above finding. I believe the finding that the licensed patent aforementioned is indispensable to the metal-air batteries dispute herein makes the entire market theory inapplicable in this case. Assuming the figure $266,-

712 is correct for the purpose of this argument, however, should not Patent 3,531,327 above mentioned have some percentage of that amount credited to it? If so, what should the percentage be—50 percent or 90 percent? Plaintiff has the burden of proof; it has failed in its proof. Plaintiff and the majority may argue that such proof is impossible. The impossibility makes the use of the entire market theory unavailable to plaintiff. Plaintiff cannot claim any damages under a patent which this court decided was licensed by plaintiff to defendant. A license is a complete defense.

My final objection to the majority's finding of $266,712 damages, which the majority derives using a 10 percent royalty rate, is that the valuation methodology used by the majority is contrary to the holding in United States v. Miller, 317 U.S. 369 (1943). Miller is fundamental in the law of federal eminent domain. In Miller the Court held that under the facts of that case, a "single project multitaking case" authorized by Congress in August 1937 with a total of $19,400,000 appropriated, the date of valuation of all properties taken under the project was August 1937, the date of authorization, and not any subsequent date. The filing date of the condemnation suit in the case before the Court was December 14, 1938, so plaintiff argued the valuation date should be December 14, 1938, because property values rose as a result of the Government project in early 1938. The Court held that the date of authorization of the project, August 1937, controlled. The pertinent parts of the decision are as follows [at pages 375-377]:

> There is, however, another possible element of market value, which is the bone of contention here. Should the owner have the benefit of any increment of value added to the property taken by the action of the public authority in previously condemning adjacent lands? If so, were the lands in question so situate as to entitle respondents to the benefit of this increment?
>
> * * *

If a distinct tract is condemned, in whole or in part, other lands in the neighborhood may increase in market value due to the proximity of the public improvement erected on the land taken. Should the Government, at a later date, determine to take these other lands, it must pay their market value as enhanced by this factor of proximity. If, however, the public project from the beginning included the taking of certain tracts but only one of them is taken in the first instance, the owner of the other tracts should not be allowed an increased value for his lands which are ultimately to be taken any more than the owner of the tract first condemned is entitled to be allowed an increased market value because adjacent lands not immediately taken increased in value due to the projected improvement.

The question then is whether the respondents' lands were probably within the scope of the project from the time the Government was committed to it. If they were not, but were merely adjacent lands, the subsequent enlargement of the project to include them ought not to deprive the respondents of the value added in the meantime by the proximity of the improvement. If, on the other hand, they were, the Government ought not to pay any increase in value arising from the known fact that the lands probably would be condemned. The owners ought not to gain by speculating on probable increase in value due to the Government's activities.

In which category do the lands in question fall? The project, from the date of its final and definite authorization in August 1937, included the relocation of the railroad right-of-way, and one probable route was marked out over the respondents' lands. This being so, it was proper to tell the jury that the respondents were entitled to no increase in value arising after August 1937 because of the likelihood of the taking of their

property. If their lands were probably to be taken for public use, in order to complete the project in its entirety, any increase in value due to that fact could only arise from speculation by them, or by possible purchasers from them, as to what the Government would be compelled to pay as compensation.

In other words, the rule prevents the owner from bootstrapping. In most cases the Government's taking tends to increase values of the properties in the project. Owners are prohibited from taking advantage of such increases in value under the Miller rule.

In the present case the Marine Corps, after testing the metal-air batteries at Camp Pendleton and in Vietnam, decided, as the trial judge found in fact finding 14, as follows:

> 14. The Marine Corps requested authority in April 1969 to issue a negotiated Letter Contract to Leesona for procurement of 2,500 BB-626( )/U batteries, 753,456 anode-electrolyte composites, 3,000 cathodes (bi-cells), and 575 "blower" covers. Since detailed cost data was not available at the time, it was contemplated that a Defense Contract Auditing Agency audit would be conducted after submission of the cost data being prepared by Leesona. Consequently, a limit of $3,700,-000 was placed on the proposed procurement, subject to reduction in light of the results of the DCAA audit.

Therefore, April 1969 was the date of authorization of the purchase of the 2,500 batteries, together with the above-mentioned accessories. Under the Miller rule, April 1969 is the cut-off date to determine fair market value of the patent rights taken by defendant via the defendant's eminent domain powers. It was one project, as in Miller, and the date of the decision to purchase was April 1969. Therefore, the majority's computation of damages in subparagraphs B and C of part III is unsound. All the figures used

by the majority came after April 1969 and the figures included added values to the metal-air batteries by reason of defendant's procurement of the 2,500 batteries. Defendant is not liable under Miller for these added values because of the very procurement in issue in this case. Plaintiff is clearly not entitled to such bootstrap values.

I admit that in eminent domain just compensation must be determined from the view of what the owner lost, as the majority argues. This is elementary. But it is also elementary that the owner is only entitled to fair market value of what the owner lost. United States v. Miller, supra. The federal eminent domain law regarding fair market value when there is a "single project multitaking case" is clearly spelled out in Miller and fair market value must be determined as the Court determined therein.

As stated in part IV of the majority opinion, the signing of the procurement contract with Eagle Picher was not the taking; but the procurement of each battery and manufacture of the batteries for defendant by Eagle Picher constituted the taking. However, the valuation of the patent rights taken is determined as of April 1969 for eminent domain purposes because this case is typically a "single project multitaking case" as in Miller. All the evidence considered by the majority to conclude plaintiff was damaged in the sum of $266,712 was after April 1969, and such evidence cannot be used to determine damages in eminent domain proceedings. Miller clearly prohibits bootstrapping in such cases.

Therefore, returning to the only relevant evidence—the 1½ and 5 percent licenses plaintiff voluntarily granted—this court has before it upon which to determine a reasonable royalty, I find the 10 percent royalty rate the majority uses completely unfounded. I am of the opinion the 5 percent rate is the appropriate, reasonable royalty rate. That is the rate at which plaintiff voluntarily licensed a foreign competitor. And although both parties object to this rate, but on different grounds (plaintiff because it was a foreign license rather than a domestic license and defendant because the foreign license included additional patents), that is the most credible royalty rate in the evidence before this court. The compensation plaintiff is entitled to receive is $41,169.86, plus interest on this amount for delayed compensation at the rate and for the period of time set forth in part IV of the majority opinion.

APPENDIX C

Per Curiam Opinion. U.S. Court of Claims. Liability Phase. Decided January 28, 1976

LEESONA CORPORATION

v.

The UNITED STATES.

No. 130-70.

United States Court of Claims.

Jan. 28, 1976.

Opinion

PER CURIAM:

This case comes before the court on exceptions by the parties to the recommended decision filed February 27, 1975, by former Trial Judge Hal D. Cooper (since resigned), pursuant to Rule 134(h), having been considered on the briefs and oral argument of counsel. Since the court agrees with the trial judge's recommended decision, as hereinafter set forth, it hereby affirms and adopts the same as the basis for its judgment in this case. It is therefore concluded: (a) that claims re Patent No. 3,419,900 (claims 4 and 7), Patent No. 3,276,909 (claim 9) and Patent No. 3,436,270 (claims 1, 2, 3, 5-8, 10, 16 and 17) are valid and infringed and defendant has no license thereunder; (b) claims re Patent No. 3,436,270 (claim 19), Patent No. 3,553,024 (claims 1, 3, 4, 6 and 11) and Patent No. 3,378,406 (claims 1, 3, 8 and 9) are invalid; (c) claims 12, 15 and 16 of Patent No. 3,438,815 are not infringed by defendant; and (d) defendant is licensed under claims 1, 2, 3, 8 and 9 of Patent No. 3,531,327. Accordingly, plaintiff is entitled to recover reasonable and entire compensation in accordance with this opinion and judgment is entered for plaintiff

therefor, the extent of which will be determined in further proceedings pursuant to Rule 131.

Opinion of Trial Judge

COOPER, *Trial Judge:*

Contending that seven of its patents have been infringed, plaintiff seeks reasonable and entire compensation under 28 U.S.C. § 1498 for defendant's procurement of a metal/air battery designated the BB-626( )/U. Defendant presents its usual array of defenses, attacking validity of each patent on a multiplicity of grounds, asserting there is no infringement of most of the patents, and alleging a license running to defendant under all of the patents.

For the reasons hereinafter stated, it is concluded that the claims at issue in patents Nos. 3,276,909, 3,419,900, and 3,436,270 (except claim 19) are valid and infringed, and that defendant has no license thereunder. It is further concluded that the claims at issue in patents Nos. 3,553,024 and 3,378,406, and claim 19 in No. 3,436,270 are invalid; that patent No. 3,438,815 is not infringed; and that patent No. 3,531,327 is subject to a license to defendant.

The subject matter in this case pertains to batteries or, stated in more technical terms, electrochemical devices for producing electrical energy through chemical processes. These devices employ a pair of electrodes (an anode and a cathode), a fuel to be consumed, and an electrolyte as essential components in the production of electrical energy. In some batteries, flashlight batteries being but one example, all reactants, including the fuel which is a metal that is a part of one of the electrodes, are contained in the battery package. In other more sophisticated types of batteries (sometimes called fuel cells),[1] the reactants, includ-

[1] There is much confusion in the use of the terms "fuel cells" and "batteries." Battery is used, in a loose sense, as a name for a wide variety of different types of electrochemical devices. It is

ing the fuel which may be a gas such as hydrogen, are supplied continuously from an external source, In either case, it is the chemical process of fuel oxidation that produces the electrons for the current in an external circuit.

The fuel cell type of battery is usually distinguished from other batteries in that the fuel cell electrode is merely a situs for the chemical reaction and is not consumed by that reaction. As a result, the useful life of a fuel cell is not normally measured in terms of its electrode life. The more conventional batteries, on the other hand, are designed to have one or both of the electrodes take an active part in the reaction so that at least one of the electrodes is consumed by the reaction. When the electrode is consumed, either the battery is thrown away or it is electrically recharged. Historically, throwaway batteries have been known as "primary" batteries while the rechargeable type has been designated a "secondary" battery.

The metal/air batteries accused to infringe are a hybrid. As with conventional batteries, the anode of a metal/air battery contains the fuel and is consumed by the chemical reaction. The cathode, however, is not consumable and, as in a fuel cell, the reactant, oxygen, is supplied from the ambient air on a continuous basis. Further, although the battery is not electrically rechargeable and, hence, is of the primary type, it is designed for rapid mechanical replacement of the consumed electrode so it is considered to be *mechanically* rechargeable.

Of the patents in suit, the '909, '900, '815, and '024 patents are concerned with electrode structures. The '270, '406, and '327 patents are directed to a metal/air battery con-

used to denote a plurality of cells, yet it is also used when referring to a single cell, *e. g.*, a flashlight "battery." Fuel cells are a part of the general "battery" field and a plurality of fuel cells are commonly referred to as a battery; however, the term "fuel cell" normally refers to a particular type of electrochemical device. (Findings 3, 4.)

figuration and the mechanical rechargeability of that battery.

Elmore and Tanner Patent No. 3,419,900

This patent discloses an electrode structure comprising a catalytic layer made from a uniform admixture of a fluorocarbon polymer and a catalytic metal powder. The fluorocarbon is preferably polytetrafluoroethylene (sometimes referred to either as PTFE or by du Pont's trademark Teflon). This mixture is carried by a suitable current collector such as a silver screen or a porous carbon block with the electrolyte being on one side of the catalytic layer and a gaseous reactant on the other.

Claim 4, the only independent claim asserted to be infringed,[2] is as follows:

> An electrochemical cell for the direct generation of electrical energy comprising an anode, a cathode, and an electrolyte, said electrochemical cell being constructed and arranged to provide a space between said anode and cathode and said space containing said electrolyte, at least one of said anode and cathode being a nonconsumable, gas-consuming electrode comprising a catalytic layer containing a substantially uniform admixture of metal containing electrocatalyst particles and a fluorocarbon polymer, said catalytic layer being exposed to the electrolyte of the cell and having a porosity sufficient to permit diffusion of gases into said catalytic layer.

All of the elements of the claim are concededly old except for the use of "a substantially uniform admixture of metal containing electrocatalyst particles and a fluorocar-

[2] **Claim 7, also asserted to be infringed, provides:**
"The electrochemical cell of claim 4 wherein the fluorocarbon polymer is polytetrafluoroethylene."

bon polymer" as a catalytic layer. The evidence is that Elmore and Tanner were the first to use this combination of materials in an electrode for an electrochemical cell.

At the outset, defendant contends that the specification is defective within the meaning of 35 U.S.C. § 112 because it does not specify the critical ratio of the catalyst to the fluorocarbon. Although defendant is correct that precise recipes are not set out in the specification, a patent is directed to those skilled in the art and need only be in sufficient detail to enable them to practice the invention. *Trio Process Corp. v. L. Goldstein's Sons*, 461 F.2d 66, 74 (3d Cir. 1972), *cert. denied*, 409 U.S. 997, 93 S.Ct. 319, 34 L.Ed. 2d 262; *Gray Co. v. Spee-Flo Manufacturing Corp.*, 361 F.2d 489, 493 (5th Cir. 1966). That requirement is satisfied here for it is clear from the evidence that a very wide range of ratios may be employed, depending on the particular desired use. The basic controlling consideration, as those in the art would readily recognize, is that an excess of polymer will adversely affect conductivity. As to specific ratios, the testimony of plaintiff's witnesses, Dr. Frysinger and Dr. Giner, and defendant's witnesses, Dr. Weissman and Mr. Moran, establishes that one of ordinary skill in the art would have no difficulty at all in selecting workable proportions in light of the patent disclosure.

Defendant next contends that the combination of claim 4 is anticipated by Niedrach et al Patent No. 3,297,484. This defense is premised on the contention that claim 4 is not entitled to the original filing date of March 4, 1960, but is entitled only to the December 22, 1966 date on which a continuation-in-part application was filed. Yet, each and every term of claim 4 is supported by, and was plainly disclosed in, the original application filed in 1960. Also from the time the first application was filed, Elmore and Tanner consistently presented claims to a new electrode composition consisting of a mixture of fluorocarbon and catalyst particles. In light of these facts, claim 4 is entitled to the

filing date of March 4, 1960. *Pursche v. Atlas Scraper & Engineering Co.*, 300 F.2d 467 (9th Cir. 1961), *cert. denied*, 371 U.S. 911, 83 S.Ct. 251, 9 L.Ed.2d 170 (1962); *Kollsman v. Ladd.* 226 F.Supp. 186 (D.D.C. 1964). Since the Niedrach patent has a filing date of May 8, 1961, it is not a reference against this claim.[3]

The principal defense asserted by defendant is that of obviousness under 35 U.S.C. § 103. This defense requires consideration of the scope and content of the prior art in 1958 when Elmore and Tanner made their invention, and a determination of whether the differences between that art and the claims in issue would have been obvious to one of ordinary skill in the art. *Graham v. John Deere Co.,* 383 U.S. 1, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966).

Defendant relies mainly on Berl Patent No. 2,275,281, Winckler et al Patent No. 2,641,623, Witherspoon et al publication entitled "*The Oxygen Electrode,*"[4] and the argument that the use of Teflon was a mere substitution of one plastic for another.

In considering this defense, it is necessary to place the prior art in context. Prior to 1958, a major problem with air- or gas-breathing electrodes had been the need to develop an electrode that would be permeable to the gas, but not so porous as to permit the electrolyte to flood the pores of the electrode. In the sophisticated fuel cell, a partial solution was the use of a biporous electrode structure and balanced gas pressures. In the more common variety of battery, various wet-proofing techniques were employed to control electrode flooding. Of particular interest are the

[3] Nor are any of the other patents that have filing dates subsequent to March 4, 1960.

[4] The parties are in disagreement whether the Witherspoon et al publication is properly a reference. Since the claims are considered to be valid even if Witherspoon is a reference, it has been unnecessary to resolve that issue.

approaches described in the Berl and Winckler patents, as well as in Witherspoon, wherein a binder material having hydrophobic properties is dissolved and the solution is combined with particles of a suitable material such as activated carbon. The generally accepted view is that the prior art approach, using, for example, ethyl cellulose, resulted in the electrode particles being at least partially coated with the plastic material. This material inhibits wetting of the electrode particles by the electrolyte and tends to form a barrier beyond which the electrolyte cannot pass. Since gas does not pass through liquid in significant quantities, this barrier then defines a line along which the chemical interaction among the three phases, gas, liquid, and solid, takes place.

The differences between the claimed electrode and that prior art, in terms of structure, reside both in the use of a fluorocarbon as the binder material and in mixing particles of the fluorocarbon with particles of catalyst instead of coating the catalytic particles with a solution of the plastic binder material as is the case with Berl and Winckler.

The differences between the claimed electrode and the prior art, in terms of functional operation, were the subject of extended testimony at trial. Dr. Giner's "flooded agglomerate" theory (finding 12) suggests that the claimed combination would allow the electrolyte to wet all of the catalyst particles, while the Teflon particles would provide a path for the air to permeate the catalytic layer. This would permit the desired three-phase reaction to occur throughout the volume of catalytic material. Dr. Frysinger explained this as a "volume reaction" in which the entire volume of catalyst is utilized, as opposed to the "line reaction" of the prior art such as Berl and Winckler where the reaction takes place along a line defined by the gas-liquid interface.[5] Defendant's expert Dr. Gilman did not

[5] Defendant's contention that the chemical reaction is the same irrespective of where it occurs is, of course, correct but entirely beside the point.

contest Dr. Giner's theory, but emphasized that it was only a theory; however, that theory has received acceptance in the industry and no opposing theories have been advanced.

The differences between the claimed electrode and the prior art, in terms of result, are not seriously in dispute. Teflon-bonded electrodes have demonstrated clear superiority in areas of energy and power density. Defendant's Dr. Gilman summed it up when he testified that everyone has gotten on the "bandwagon" of Teflon-bonded catalysts. This has included companies such as General Electric, American Cyanamid, and Pratt & Whitney.

Based on these differences in structure, function, and result, defendant's contention that the use of Teflon is a *mere* substitution of materials in the Berl and Winckler electrodes cannot be accepted. It ignores the fact that not only is the material not suggested by any prior art but that neither Berl nor Winckler suggests using binder particles in a mixture with catalyst particles. Thus, not only is a different material used, it is being used in a different form to produce a different structure, with significantly improved and unexpected results. Hence, more than a mere substitution is involved. *Carbide & Carbon Chemicals Corp. v. Coe,* 69 App.D.C. 372, 102 F.2d 236, 241 (1938); *Allen Filter Co. v. Star Metal Manufacturing Co.,* 40 F.2d 252 (3d Cir. 1930), *cert. denied,* 282 U.S. 848, 51 S.Ct. 27, 75 L.Ed. 752.

Defendant also contends that Teflon-bonded electrodes were simultaneously developed by a number of individuals and that this is further indicative of its obviousness. While that factor is sometimes considered as an indicia of obviousness, see, e. g., *Felburn v. New York Central R.R.,* 350 F.2d 416, 425-26 (6th Cir. 1965), *cert. denied* 383 U.S. 935, 86 S.Ct. 1063, 15 L.Ed.2d 852 (1966), the facts do not support such a conclusion here. Elmore and Tanner made their invention in mid-1958, well over a year before the work of anyone else in the field. The bulk of the publications on which defendant relies to establish the alleged simultaneous

invention bear dates subsequent to Elmore's public disclosure of their work in May 1960. Moreover, Elmore and Tanner have been recognized by those in the field as being the first to work with Teflon-bonded electrodes.

In the final analysis, the "before and after" actions and judgments of those in the field, *Safety Car Heating & Lighting Co. v. General Electric Co.,* 155 F.2d 937, 939 (2d Cir. 1946), are the most persuasive evidence that the combination of claim 4 was an unobvious development. Before the invention, work was being done with plastic materials as binders for electrodes. Although Teflon was available, no one had suggested using that material, despite its well-known hydrophobic properties. After Teflon-bonded electrodes became known, virtually the entire industry shifted to it, even though no one understood why the electrode was so superior to the prior art. Since then, a great deal of research has been devoted to this electrode but, even now, only theories have been developed to explain its superior performance.

Under these circumstances, it is concluded that claims 4 and 7 are valid.

As to infringement, the BB-626( )/U is plainly an electrochemical cell for the direct generation of electrical energy. Defendant has stipulated that the cathode is a uniform admixture of Teflon and a catalyst. A case of infringement of claims 4 and 7 has been established.

Defendant's contention that 28 U.S.C. § 1498 bars this suit because Dr. Tanner was an employee of the United States at the time he executed the continuation-in-part application is without merit. Dr. Tanner was neither employed by nor in the service of defendant either when the invention of claims 4 and 7 was made in 1958 or when the original application was filed in 1960. Since the claims are entitled to the 1960 filing date, his subsequent employment history is irrelevant and the bar expressed in 28 U.S.C. § 1498 is inapplicable.

Finally, defendant contends that it is entitled to an "implied" license under this patent, pointing to a series of contracts commencing in March 1966 between the parties for the militarization and procurement of plaintiff's zinc/air battery, and to plaintiff's acquisition of the Elmore and Tanner patent application in June 1966. These facts, however, are insufficient to award defendant a license.

The Teflon-bonded electrodes of claims 4 and 7 were neither first conceived nor reduced to practice under any federally funded project, or under any contract with defendant. The work of Elmore and Tanner was financed by the Kettering Foundation, and plaintiff, which had been working with Teflon-bonded electrodes prior to 1966, had incorporated that type of electrode in its own privately funded zinc/air battery program prior to all of the contracts on which defendant relies. Therefore, Teflon-bonded electrodes were never a "subject invention" under the patent rights clause of any of the contracts, and as defendant apparently concedes, it has no express license.[6]

In view of these facts, defendant's reliance on the "close umbilical connection" doctrine of *Mine Safety Appliance Co. v. United States*, 176 C.Cl. 777, 364 F.2d 385 (1966), is misplaced. In important aspects, the situation here is the reverse of that in *Mine Safety*. In that case, the court found that the contractor's allegedly separate project was in fact obtaining benefits from the Government sponsored and financed project being carried on at the same time. In this case, the benefits flow the other way. While the batteries it procured from plaintiff incorporated the Teflon-bonded electrode technology of claims 4 and 7, defendant contrib-

[6] Since, under defendant's contracts with plaintiff, Teflon-bonded electrodes were not a "subject invention," expressly licensed to the Government, this is not a situation where, by a subsequently acquired patent, the contractor attempts to dominate rights previously granted to the Government. *Compare, AMP, Inc. v. United States*, 389 F.2d 448, 182 Ct.Cl. 86 (1968), *cert. denied*, 391 U.S. 964, 88 S.Ct. 2033, 20 L.Ed.2d 878.

uted nothing at all to that development. Moreover, through plaintiff's unilateral action in acquiring the Elmore and Tanner application, any liability defendant may have had to the Kettering Foundation by reason of these contracts with plaintiff was eliminated, again at no cost to defendant. Having received those benefits without the expenditure of any federal funds, and having failed to demonstrate any umbilical relationship between the work of Elmore and Tanner in 1958 and the procurement of batteries in 1966, defendant is not entitled to a license under this patent.[7]

Moos Patent No. 3,276,909

This patent discloses an electrode consisting of a polymeric film that serves as a backing or support for the catalytic layer. The patent suggests that either hydrophilic or hydrophobic polymers could be used, polytetrafluoroethylene being listed as one suitable polymer. If a hydrophilic material is selected, the patent specifies that it should be oriented so it is in contact with the electrolyte; if a hydrophobic material is used, the patent discloses it should be oriented so it is in contact with the gas.

Claim 9, the only claim at issue, provides:

> A fuel cell for the generation of electrical energy directly from a fuel and oxidant comprising an electrolyte, at least one oxidizing electrode, at least one fuel electrode, said electrodes being in contact with said electrolyte, and means for providing fuel cell reactants to said electrodes, ate [*sic*] least one of said electrodes comprising a porous hydrophobic polymer matrix having a porous conductive catalytically activating metal layer in intimate contact with one surface, the said catalytically activating metal layer being in contact with the electrolyte of the fuel cell.

[7] The suggestion that plaintiff reshaped the Elmore and Tanner application based on inputs from Government contract work is without any evidentiary support.

The principal prior art on which defendant relies for its contention of obviousness is Williams Patent No. 3,116,170. That patent was also the principal prior art relied on by the Patent Office. It discloses a hydrophilic support for a catalytic layer oriented with the hydrophilic material in contact with the electrolyte. Claim 9 differs in that a hydrophobic material is specified and the orientation is the reverse of that shown in Williams.

In considering the unobviousness of these differences, *Graham v. John Deere, supra,* it is pertinent that Teflon-backed electrodes have now been widely adopted in the industry and are recognized as one of the most efficient electrodes known. In light of the greatly improved performance of this type of electrode, two factors are particularly significant on the obviousness issue. As explained more fully in finding 19, the orientation of the Moos electrode was contrary to accepted practice in the art. This is evidence of nonobviousness. *United States v. Adams,* 383 U.S. 39, 86 S.Ct. 708, 15 L.Ed.2d 572 (1966). Moreover, General Electric, in its extensive work in this same area, failed to adopt a similar orientation until over 1½ years after Moos, and then found the good performance of the electrode to be surprising. (Finding 20.) That too is an indication of nonobviousness. *Jones Knitting Corp. v. Morgan,* 361 F.2d 451, 457-8 (3d Cir. 1966).

The most pertinent prior art being that already considered by the Patent Office, and in view of the foregoing facts, it is concluded that claim 9 is valid.

Defendant also contends that the patent is unenforceable because, in an affidavit submitted to the Patent Office to distinguish the claim from the Williams reference, the inventor Moos stated that he holds a doctoral degree when, as plaintiff now stipulates, he does not. It is, of course, well settled that misstatements of fact in representations to the Patent Office may render the patent unenforceable. ***Walker Process Equipment, Inc. v. Food Machinery & Chemical Corp.,*** 382 U.S. 172, 82 S.Ct. 347, 15 L.Ed.2d 247 (1965). The general rule, however, is that the misrepresentation

must be relevant and material to the deliberations of the Patent Office. *Tate Engineering, Inc. v. United States,* 477 F.2d 1336, 201 Ct.Cl. 711 (1973); *Henkels & McCoy, Inc. v. Elkin,* 316 F.Supp. 303 (W.D.Pa.1970), *aff'd* 455 F.2d 936 (3d Cir. 1972). Here, the file wrapper history reveals that the purpose of the affidavit was to report the results of certain tests conducted in plaintiff's laboratory. The file history further indicates that it was the substance of the test results set out in the affidavit, not the degrees held by the affiant, that resulted in the allowance of claim 9. Since there was no factual error in the affidavit as to the tests conducted or the results thereof, the misstatement regarding Moos' educational background is deemed to be immaterial. Accordingly, the defense of unenforceability cannot be sustained.

Defendant also contends that claim 9 is not infringed. In large part, this is based on the assertion that a metal/air battery is not a "fuel cell." However, the Patent Office has stipulated to the contrary (findings 4, 21), and the evidence is that those in the art recognize this type of battery as a hybrid, having features of both a classic fuel cell and a conventional battery. The '909 patent is concerned with electrode structures and it is particularly in this area that those in the art have recognized the overlap between classic fuel cells and conventional batteries. Accordingly, the distinction defendant seeks to draw cannot be sustained.

Nor can the contention that the BB-626( )/U has no "means for providing fuel cell reactants" be accepted. The one reactant, air, is fed on a continuous basis through openings in the casing. The other reactant, zinc, is supplied on a batch basis each time an anode is replaced. While defendant is correct that the reactants in the embodiment disclosed in the specification are fed continuously, the claim language does not require this. Since a periodic batch replacement is clearly a means of supplying a reactant and since the particular means by which the reactants are fed

was neither signifiant to the prosecution history nor to the invention itself, plaintiff is not limited to the specific mode disclosed. A case of infringement has been made out.

Finally, defendant contends it has an "implied" license under this patent, relying principally on a Navy contract it had with plaintiff involving work in the area of fuel cells.[8] Although that contract did contain a patent rights clause and was still open at the time Moos made his invention, the facts clearly show that the electrode was neither conceived nor reduced to practice in the performance of work called for or required under that contract. Moos' work was financed by in-house funds, and it did not pertain to any aspect of the particular work then being performed under that contract. Defendant has no license. *Erie Resistor Corp. v. United States*, 279 F.2d 231, 150 Ct.Cl. 490 (1960).

Giner Patent No. 3,438,815

This patent discloses an electrode which includes a micro-porous metal layer for controlling bubble pressure, the pore size of the layer being about 1 to 50 microns in diameter.

Each of 12, 15, and 16, the only claims in issue, calls for a "porous self-sustaining metal layer of uniform and controlled porosity," this metal layer clearly referring to the micro-porous layer described in the specification. The accused battery has nothing of a similar nature. The current collector, specified by plaintiff as corresponding to the claimed metal layer, is a conventional expanded metal screen with openings far in excess of 50 microns. While it is porous and self-sustaining and, in a very loose sense, could be said to have a uniform and controlled porosity, it is clear that it is neither intended to perform the function of the micro-

[8] Although defendant also asserts a license under an Air Force contract, it has not identified any specific work performed by plaintiff that would give rise to a license as a result of that contract.

porous metal layer disclosed, nor in fact does so. Any effect it would have on bubble pressure would be incidental and entirely insignificant.

It is well settled that more than a literal response to the terms of the claims must be shown to make out a case of infringement. *Westinghouse v. Boyden Power Brake Co.*, 170 U.S. 537, 568, 18 S.Ct. 707, 42 L.Ed. 1136 (1898); *Marvin Glass & Associates v. Sears Roebuck & Co.*, 448 F.2d 60 (5th Cir. 1971); *Autogiro Co. v. United States*, 384 F.2d 391, 181 Ct.Cl. 55 (1967), *rehearing denied*, 184 Ct.Cl. 801 (1968). Since the accused metal layer does not perform substantially the same function in substantially the same way for substantially the same purpose as the patented micro-porous metal layer, there is no infringement and, hence, there can be no liability under this patent. *Dominion Magnesium Ltd. v. United States*, 320 F.2d 388, 162 Ct.Cl. 240 (1963).[9]

Fishman Patent No. 3,553,024

This patent discloses the same basic electrode structure as that in Moos Patent No. 3,276,909, differing only in the requirement that the Teflon film is to be unsintered, *i. e.*, it has not been subjcted to temperatures of 327° C. or above.

The difficulty in finding anything unobvious in the claimed combination is insurmountable. In suggesting the use of Teflon, the '909 patent does not distinguish between the

[9] While the better practice is to treat both the validity and infringement issues, *Sinclair Co. v. Interchemical Corp.*, 325 U.S. 327, 65 S.Ct. 1143, 89 L.Ed. 1644 (1945), particularly in view of the public interest in the validity issue, *Ditto, Inc. v. Minnesota Mining & Manufacturing Co.*, 336 F.2d 67 (8th Cir. 1964), it is not always necessary to do so. *Dresser Industries, Inc. v. United States*, 432 F.2d 787, 193 Ct.Cl. 140 (1970). Where, as here, noninfringement is clear and invalidity is not plainly evident, it is appropriate to treat only the infringement issue. *Lockwood v. Langendorf United Bakeries, Inc.*, 324 F.2d 82 (9th Cir. 1963).

sintered and unsintered types of films, but both types were available commercially in 1961 when the Moos patent application was filed. What is clearly taught by Moos, however, is that the Teflon is to be oriented toward the gas, thus requiring diffusion of the gas through the Teflon. In light of that teaching, and the known generally impermeable nature of sintered Teflon (finding 28), it is concluded that it would have been obvious to anyone with any skill at all at the time Fishman made his invention to try a permeable unsintered Teflon in the Moos arrangement. The substitution of an unsintered Teflon film in either of Examples 1 or 2 of the '909 patent would inherently achieve the advantages and benefits claimed by Fishman since none of the process steps in either of those examples would subject the Teflon to temperatures in excess of 327° C. Unsintered Teflon being the logical choice to use, there is nothing patentable in Fishman's selection of that material and claim 1 is deemed to define a combination that is obvious and invalid. *Mills v. Watson*, 96 U.S.App.D.C. 43, 223 F.2d 335 (1955).

Claims 3, 4, and 6, dependent on claim 1, merely add details regarding the Teflon-bonded catalytic layer. Those details are disclosed in the '900 patent and add nothing of patentable significance to the combination of claim 1 when presented in this patent. Claim 11, also dependent on claim 1, merely describes a zinc anode, something notoriously old in the battery field.

Claims 1, 3, 4, 6, and 11 are invalid.

OSWIN ET AL PATENT No. 3,436,270

This patent discloses a metal/air battery having a gas permeable cathode of a particular design and a replaceable metal anode. The cathode, described as an envelope, forms a closely fitting pocket or enclosure for receiving the anode and the electrolyte. With this design, the cell is mechanically recharged merely by removing the expended anode from the envelope cathode and inserting a fresh anode.

Claims 1, 2, 3, 5-8, 10, 16, and 17 (all article claims), and claim 19 (a method claim), are asserted to be infringed. Defendant does not contest infringement and it is clear that each of the claims is infringed.

Defendant relies on 11 patents, in various combinations, in support of its contention that the article claims are obvious. (Finding 30.) Of these, only the Heise and Thompson patents disclose a mechanically rechargeable concept. Thompson is not otherwise pertinent, being merely a classic type of railroad battery requiring a large volume of electrolyte. Heise does disclose a flat-cell configuration in which the anode is mechanically replaceable; however, the anode is spaced a substantial distance from the cathodes and this spacing, together with the rigid frame supporting the cathodes, both limits the intimate engagement of the anode, paste electrolyte, and cathode, and requires a substantial volume of the electrolyte. This same structural arrangement was basically employed by General Electric in its work in 1964.[10]

The contribution of Oswin and Chodosh lies in the close-fitting relationship of the replaceable anode and cathodes whereby a minimum volume of electrolyte is required and a high energy and power density cell is achieved. None of the prior art either discloses the same relationship or achieves comparable results. The importance of this relationship is confirmed both by the tests conducted by the defendant

[10] See findings 31a-f. Contrary to plaintiff's contention, the General Electric work was not abandoned, suppressed or concealed. Its work in 1964, although it did not result in a battery of a character suitable for commercial use, was sufficient to demonstrate operativeness. Its continued work throughout the latter part of 1964 and early 1965, its periodic reports to its customer, the prompt filing of a patent application when the project was concluded, the subsequent papers it published, and its attempt to sell the battery to the Marine Corps, negate the contention that G.E. abandoned, suppressed or concealed the battery. *International Glass Co. v. United States*, 408 F.2d 395, 187 Ct. Cl. 376 (1969).

(finding 32(b)) and by the fact it was copied in the accused batteries; its unobviousness is revealed by the contemporaneous failure of General Electric and Yardney to arrive at a similar construction. *LaSalle Street Press, Inc. v. McCormick & Henderson, Inc.*, 445 F.2d 84, 93 (7th Cir. 1971).

Claim 1 [11] is cast in rather broad language but is specifically limited to an "envelope cathode." While language more specific in terms of structure would have been preferable, when construed in light of the specification and the prosecution history, it is apparent that this phrase was intended to describe a cathode structure that closely surrounds and encloses an anode. Clearly, the widely spaced cathodes and boxlike structures of Heise and General Electric are not an *envelope* in the sense intended by the patentees. Moreover, an interpretation of the claim which limits it to the close-fitting relationship disclosed in the speculation is consistent with the principle that, where suspectible to more than one construction, that one will be adopted which will preserve to the patentee his actual invention. *Tate Engineering, Inc. v. United States, supra; Dominion Magnesium Ltd. v. United States, supra.* Here the construction most favorable in terms of preserving validity also coincides with the construction placed on the language by the patentees.

As properly construed, it is concluded that claim 1, and the claims of dependent thereon, are valid and infringed.

Defendant's contention that it obtained a license under these claims by reason of work under an Air Force contract

[11] Claim 1 is as follows:

"An improved metal-air or metal-oxygen electrochemical cell containing a gas permeable envelope cathode comprising a hydrophobic polymer membrane and a conductive catalytic coating on the inner surface of said membrane, a replaceable metal anode positioned within said envelope cathode, an electrolyte in the space separating the cathode and anode, and means for retaining said anode in said envelope cathode and permitting its ready removal."

performed by plaintiff is unsupported by the facts. The evidence, largely exhibits introduced by defendant, is that the envelope cathode and mechanical-recharge concept were conceived and reduced to practice by plaintiff prior to its entering into the contract. (Findings 34a-e.) Merely because plaintiff later used aspects of that technology in the performance of its contract does not give defendant any rights under the patent. *Eastern Rotorcraft Corp. v. United States*, 384 F.2d 429, 181 Ct.Cl. 299 (1967). Defendant received the benefit of that technology without paying for its development; it does not also get a royalty-free license.

As to method claim 19,[12] each of the recited method steps is inherent both in the Heise and the earlier G.E. work. The only distinction over the prior art lies in the envelope cathode structure set out in the claim. However, it is generally the rule that patentability of a method claim must rest on the method steps recited, not on the structure used, unless that structure affects the method steps. A. Deller, Patent Claims § 372 (2d ed. 1971). In this case, it is apparent that the claimed method steps are not affected by the claimed cathode structure since the very same method would be used with the box cathode of Heise.

There can be no doubt that the invention of the '270 patent lies in the envelope cathode structure, not in the known method of recharging a battery by replacement of an anode.

[12] *Claim 19:*

"The method of generating electricity employing a metal/air or metal/oxygen electrochemical cell having a replaceable and consumable metal anode positioned within a gas permeable nonconsumable envelope cathode comprising a hydrophobic polymer membrane and a conductive catalyst layer on the inner surface of said membrane and an electrolyte separating said anode and cathode, said method comprising the steps of discharging said consumable metal anode by applying a load to said electrochemical cell, removing the discharged anode from said non-consumable [*sic*] envelope cathode and inserting a fresh or charged anode into said envelope cathode."

That old method cannot be transformed into a patentably new one merely by using it to recharge a battery having a cathode not shown in the prior art. *Pierce v. Muehleisen*, 226 F.2d 200 (9th Cir. 1955); *Chenault v. Nebraska Farm Products, Inc.*, 138 F.Supp. 772 (D.Neb.1956). In short, claim 19 purports to define a new method and its validity must be assessed on the basis of the method steps described. Failing to define a method that is distinguishable from the prior art methods, claim 19 is held to be invalid.

ROSANSKY PATENT No. 3,378,406

This patent discloses a metal/air battery of the same type and construction as disclosed in the '270 patent, Rosansky's contribution being a system of specially designed spacers that separate the adjacent cells to provide access of air to the cathodes.

The use of spacers to provide a flow path for a gas between adjacent electrode surfaces is notoriously old and those in the battery art were, long prior to Rosansky's work, familiar with the function of spacers in stacked electrodes. (Finding 36.) Plaintiff's contention that the particular spacers designed by Rosansky control the growth of the cell can be given no weight since it is much narrower than the language of the claims. The claims are the measure of the invention and validity must be determined on the basis of what is claimed. *Kemode Manufacturing Co. v. United States*, 347 F.2d 315, 171 Ct.Cl. 698 (1965); *Chesterfield v. United States*, 159 F.Supp. 371, 141 Ct.Cl. 838 (1958). Claim 1 [13] merely calls for spacer elements; it does not relate those

[13] Claims 1, 3, 8, and 9 are in issue and provide as follows:

"1. An improved metal/air or metal/oxygen electrochemical battery comprising a plurality of electrochemical cells each containing an envelope cathode comprising a hydrophobic polymer membrane and a conductive catalytic layer on one major surface of said membrane, said one major surface comprising the inner surface of said cathode, a metal anode positioned within said envelope cathode, and an electrolyte in the

spacer elements to the cathode surfaces such that cell growth would be controlled. It is not enough that the particular spacers shown in the drawings may be new and novel or perform a new function. Patent claims are required for the very purpose of forcing the patentee to insert in the *claims* those limitations and relationships regarded to be the invention. *Strumskis v. United States*, 474 F.2d 623, 200 Ct.Cl. 668, *cert. denied*, 414 U.S. 1067, 94 S.Ct. 576, 38 L.Ed. 2d 472 (1973); *cf. Alma Motor Co. v. United States*, 134 F. Supp. 641, 133 Ct.Cl. 59 (1955).

By casting claim 1 in overly broad language, the patentee has simply failed to provide a structural bridge between the desirable functional results said to be achieved and the mechanism by which those results are obtained. As broadly claimed, the combination of a plurality of cells with spacers therebetween does not distinguish from the G.E. battery or stacked cells of the Heise type.

space separating the cathode and anode, intercell spacer elements between adjacent cells, said spacer elements having openings therein to permit access of gaseous oxidant to said envelope cathodes, at least one of said spacer elements being arranged in said battery in such manner that said oxidant contacts at least one surface of at least two of said envelope cathodes only through the openings in said elements."

* * * * * *

"3. The improved battery of claim *1* including means for retaining said plurality of cells and said intercell spacer elements in operable structural association comprising an outer casing having openings therein to permit access of air or oxygen to the envelope cathode."

* * * * * *

"8. The improved battery of claim *1* wherein the electrolyte of the electrochemical cell is trapped in a matrix."

"9. The improved battery of claim *8* wherein the metal anode is zinc, the hydrophobic polymer membrane of the envelope cathode is polytetrafluoroethylene, and an alkaline hydroxide electrolyte is trapped in a paper matrix."

While claim 1 is expressly limited to envelope cathodes, and defendant has not cited any prior art showing stacked envelope cathodes with spacers, that does not alter the obviousness conclusion. Plaintiff presents no argument that spacers, when used with envelope cathodes, achieve any different result or function any differently than when they are used with other kinds of cathodes. Most certainly, there is nothing in the claim to support such a conclusion. Accordingly, the question is simply whether the recitation of an "envelope cathode" in the combination of claim 1 is a sufficient basis on which to sustain the claim.

It is concluded that it is not. Only one patent can be granted for one invention. *Miller v. Eagle Manufacturing Co.*, 151 U.S. 186, 14 S.Ct. 310, 38 L.Ed. 121 (1894); *Tektronix, Inc. v. United States*, 195 C.Ct. 53, 445 F.2d 323 (1971). Envelope cathodes were the invention of Oswin and Chodosh, not Rosansky, and their '270 patent discloses stacked envelope cathodes with spacers. Claim 2 of the '270 patent sets out the same basic combination of a plurality of stacked cells described in Rosansky's claim 1. Although not recited as a specific element, one practicing the combination of claim 2 would necessarily require spacers between the adjacent cells.

Plaintiff cannot proliferate its patent holdings merely by presenting claims which add to the basic envelope cathode arrangement of Oswin and Chodosh mechanical details such as spacers that, as broadly claimed, are obvious to those in the art. *Cf. Pratt & Whitney Co. v. United States*, 345 F.2d 838, 170 Ct.Cl. 829 (1965). In other words, two patents directed to the same combination cannot be sustained where patentability of the claims in both is predicated on the same feature. Since the '270 patent covers the basic envelope cathode invention, and Rosansky's work only purports to be an improvement thereof, it is claim 1 that must fall. *In re Stanley*, 214 F.2d 151, 41 CCPA 956 (1954); *cf. In re Vogel*, 422 F.2d 438, 57 CCPA 920 (1970).

Claim 3 merely adds a battery case having openings. Packaging of cells in a case is notoriously well known, as shown for example in the Hollman et al patent (finding 36) wherein the case holds the cells in an assembled relationship. Merely providing openings in the case for allowing air to reach an air-breathing electrode, which is all the claim requires, is an obvious concept.

Claims 8 and 9 add only details regarding the electrolyte and the Teflon backing of the electrode. These features were not the invention of Rosansky and were, at the time of his work, known in the art. They add nothing of patentable significance to the combination of claim 1.

Claims 1, 3, 8, and 9 are held to be invalid.

Moos Patent No. 3,531,327

This patent discloses a gas and liquid impermeable package containing a consumable metal anode, a separator material around the anode, and all of the electrolyte material needed to operate a metal/air cell over the life of the metal anode. This method of packaging the anode permits mechanical recharging of the metal/air cell of the '270 patent without the need for bottles of corrosive electrolyte material.

Defendant does not seriously assert noninfringement but attacks validity, as well as contends for a license. Because of the conclusion that the license defense is a sound one, it is unnecessary to consider the issue of validity.[14]

Plaintiff developed the mechanical-recharging concept under its own in-house program and, by September 1965, had commenced packaging anode-electrolyte composites in polyethylene bags to test their shelf life. These shelf-life tests continued at a low level of activity until April 1966 when a comprehensive program to investigate the parameters affecting shelf life of packaged anodes was commenced. Up to that time, all of the packaging had been

[14] See n. 9, *supra*.

with polyethylene. Commencing in the early part of 1966, plaintiff entered into a series of contracts with defendant regarding the supply of mechanically rechargeable metal/air batteries. The packaging of anodes was part of the work under these contracts. Plaintiff continued its evaluation and work on packaging of anodes until October 1967, by which time it was determined that polyethylene was unsatisfactory due to its permeability. A composite of Mylar, polyethylene, and aluminum foil was then used to package the anodes.

The nature of the '327 invention is such that its workability, a prime requirement for a reduction to practice, *Eastern Rotorcraft Corp. v. United States, supra,* could not be ascertained until after the packaged anode-electrolyte composite had been subjected to suitable shelf-life tests. Those tests revealed that the polyethylene was unworkable because it did not provide a substantially liquid impermeable envelope. Since claim 1 expressly requires a liquid impermeable envelope, and since that limitation is of critical importance to achieving the objectives of the invention, it is apparent that there was no reduction to practice of the invention through use of the polyethylene. A workable material satisfactory meeting the requirements of claim 1 was not found until 1967, at the time and during the course of work under contracts with defendant. (Findings 38, 39.)

The standard patent rights provision contained in plaintiff's contracts gives defendant a license under any invention "first actually reduced to practice" in the course of the contract. In view of the foregoing facts, it is clear that defendant has a license under the combination of claim 1, as well as dependent claims 2, 3, 8, and 9.

Addendum

Because of the number of patents involved and the need to treat each patent individually, a few matters that either could not or should not be so compartmentalized remain to be mentioned.

While it is difficult to assess, on an individual basis, the relative contributions of the inventions of the '900, '909, and '270 patents to the success of the BB-626( )/U, there is no doubt that they were of substantial importance. In head-on competition with the conventional silver/zinc battery, the BB-626 proved to be superior beyond any question. (Finding 40(c).) For example, the conventional battery required 10 hours to recharge while plaintiff's battery requires only 10 *minutes*. It proved to be lighter, with greater capacity and higher power levels. This superiority was in large part due to the Teflon-bonded electrode (covered by the '900 patent), the Teflon backing of the electrode (covered by the '909 patent), and the envelope configuration of the cathode and its mechanical rechargeability (covered by the '270 patent). This is further evidence of the validity of these patents.

On the license issue, defendant has two arguments that have not been mentioned. The first is that the whole history of the dealings between the parties leads to the conclusion that it was the mutual effort of both plaintiff and defendant that led to the creation of the accused devices. A review of that history, however, rather readily reveals that this argument is not supported by the facts and must be rejected. Basically, the contracts between the parties fall into two categories, one for work on fuel cells and the second relating to metal/air batteries. The fuel-cell work was performed in the late 1950's and early 1960's and was related to Bacon-type cells with biporous nickel electrodes.[15] The technology of biporous nickel electrodes is a separate subject and quite unrelated to the Teflon bonded-and-backed electrodes here in issue. The parties did not have any dealings on metal/air batteries until mid-1965, at the earliest.

[15] Previous to these contracts, plaintiff had acquired the rights to the Bacon technology which, in the early 1960's, had the highest theoretical current density of any known fuel cell.

By then, plaintiff already had developed, tested, and demonstrated, with its own funds, the basic zinc/air battery that became the BB-626.

In sum, plaintiff's work on Bacon cells did not generate, nor was it related in any way to, the inventions here in issue while the metal/air contracts were after the fact and dealt only with militarization and procurement of the batteries. To the extent patentable innovations were made under these latter contracts, defendant has already received express licenses from plaintiff (finding 42).

This leads to the second of defendant's points which is that, because it is expressly licensed under certain patents covering improvements made by plaintiff during the course of militarizing the battery, it argues it should receive a license to practice the inventions in plaintiff's basic patents. This contention has no substance, particularly in light of the express language in the contract documents which limits defendant's rights to "subject inventions" made under the contract, and the language of the express license agreements which states that the Government shall not obtain a license "by implication or otherwise" to any inventions other than those expressly licensed. *Eastern Rotorcraft Corp. v. United States, supra; Erie Resistor Corp. v. United States, supra.*

APPENDIX D

Per Curiam Opinion, U.S. Court of Claims, re Attorney Fees, Decided March 4, 1977

U.S. Court of Claims

LEESONA CORPORATION

v.

UNITED STATES

No. 130-70

Decided March 4, 1977

PER CURIAM.

This case comes before the court pursuant to our Rule 53 on defendant's request for review of the trial judge's ruling that evidence submitted by plaintiff with respect to attorneys' fees and legal expenses incurred by plaintiff as a result of defendant's taking a license under plaintiff's patents would be received. The question of admissibility was certified by the trial judge in accordance with Rule 53(c)(2)(i).

This action was brought under 28 U.S.C. § 1498(a) (1970) to secure reasonable and entire compensation for the unauthorized use of seven patents owned by plaintiff. In Leesona Corp. v. United States, 208 Ct. Cl. 871, 530 F.2d 896, 192 USPQ 672 (1976), this court held three of these patents valid and infringed and remanded the case for an accounting pursuant to Rule 131.

Plaintiff in a pretrial brief and preliminary findings of fact, filed pursuant to Pretrial Order No. 1, contended that it is entitled to attorneys' fees as part of reasonable compensation under 28 U.S.C. § 1498(a). Plaintiff requested the following finding:

24. As a result of defendant's taking of a licnse under plaintiff's patents, plaintiff has expended in excess of $310,000 in litigation fees and expenses leading to the trial court's holding of validity of its patents. Accordingly, as a part of reasonable and entire compensation, plaintiff is to recover litigation fees and expenses, and ten (10%) percent interest on said fees and expenses continuing from point of incurrence, commencing on Apil 20, 1970 through payment.

Plaintiff also included a prayer for attorneys' fees as part of its requested conclusions of law. Plaintiff relies on Pitcairn v. United States. No. 50328, 192 USPQ 612 (Ct. Cl. December 15, 1976), and the reference therein (at slip op. 20), 192 USPQ at 622, to King v. United States, 205 Ct. Cl. 512, 504 F.2d 1138 (1974), to support its request for attorneys' fees.

At a final pretrial conference, January 3, 1977, defendant stated its intention to object to the inclusion of evidence regarding attorney's fees. The trial judge preliminarily ruled that evidence of attorney's fees would be admitted. This preliminary ruling was incorporated into the Memorandum of Pretrial Conference, filed January 4, 1977, stating:

> In view of the trial judge's interpretation of Autogiro v. United States, evidence will be received with respect to attorney's fees notwithstanding defendant's reliance upon Calhoun v. United States or the absence of a specific statute authorizing an award of attorney's fees, per se.

On the second day of trial, January 5, 1977, plaintiff offered exhibit PXA8, a compilation of attorneys' fees and expenses, and sought to elicit testimony in support of the compilation contained in the exhibit. Defendant objected on the grounds that the exhibit document and testimony were

not relevant in an accounting to determine reasonable and entire compensation under 28 U.S.C. § 1498(a). Defendant's objection was overruled and the testimony and exhibit PXA8 were admitted.

On January 9, 1977, the trial judge noted on record that a motion, Second Request for Rehearing and Reconsideration, had been filed in Pitcairn v. United States, supra. The trial judge then certified "the question of admissibility of the evidence of attorneys' fees" because of the reference to the instant case in the Pitcairn motion and the similarity of legal issues involved in both cases.

This Rule 53 motion has been timely filed following the certification.

The issue of whether attorneys' fees and expenses could form part of reasonable compensation, as presented in this case, was addressed and decided in Calhoun v. United States, 197 Ct. Cl. 41, 453 F.2d 1385, 172 USPQ 438 (1972), and Regent Jack Manufacturing Co. v. United States, 155 Ct. Cl. 222, 292 F.2d 868, 130 USPQ 235 (1961).

Congress can award more than the constitutionally mandated "just compensation." In the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, 42 U.S.C. § 4654(c) (1970), cited in King v. United States, 205 Ct. Cl. at 520, 504 F.2d at 1143, Congress provided for an award of attorneys' fees and expenses in addition to "just compensation." However, Congress has passed no such statute awarding attorneys' fees and litigation expenses in a 28 U.S.C. § 1498 action. Therefore, Calhoun and Regent Jack are still determinative of this issue. The recent decision in Pitcairn v. United States, supra, is not authority to the contrary. The statement on pages 20 and 21 of that opinion nowhere recites that attorneys' fees could ever be made a part of compensation under 28 U.S.C. § 1498. Furthermore, after considering the requests for rehearing in

Pitcairn, this court by order deleted the citation to King, supra, and clarified any possible ambiguity raised thereby. Pitcairn v. United States, Ct. Cl. No. 50328 (Order of March 4, 1977).

In view of this court's precedent and policy, evidence of attorneys' fees and litigation expenses is inadmissible as evidence in an accounting under 28 U.S.C. § 1498 since it is not relevant to the issue of "reasonable and entire compensation." Therefore,

It is ordered that PXA8 and all testimony related to the exhibit and attorneys' fees is stricken from the record.

APPENDIX E

Constitutional Provisions, Statutes and Rules Involved

Constitution Of The United States:

ARTICLE I—THE CONGRESS

Section 8. The Congress shall have Power To lay and collect Taxes, Duties, Imposts and Excises, to pay the Debts and provide for the common Defence and general Welfare of the United States; but all Duties, Imposts and Excises shall be uniform throughout the United States;

* * *

To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries;

AMENDMENT V—CAPITAL CRIMES; DOUBLE JEOPARDY; SELF-INCRIMINATION; DUE PROCESS; JUST COMPENSATION FOR PROPERTY

No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces, or in the Militia, when in actual service in time of War or public danger; nor shall any person be subject for the same offence to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.

Statutes

(United States Code, Title 35—Patents)

§ 154. Contents and term of patent

Every patent shall contain a short title of the invention and a grant to the patentee, his heirs or assigns, for the term of seventeen years, of the right to exclude others from making, using, or selling the invention throughout the United States, referring to the specification for the particulars thereof. A copy of the specification and drawings shall be annexed to the patent and be a part thereof. July 19, 1952, c. 950, § 1, 66 Stat. 804.

§ 271. Infringement of patent

(a) Except as otherwise provided in this title, whoever without authority makes, uses or sells any patented invention, within the United States during the term of the patent therefor, infringes the patent.

(b) Whoever actively induces infringement of a patent shall be liable as an infringer.

(c) Whoever sells a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.

(d) No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following: (1) derived revenue from acts which if performed by another without his consent would constitute contributory infringement of the patent; (2)

licensed or authorized another to perform acts which if performed without his consent would constitute contributory infringement of the patent; (3) sought to enforce his patent rights against infringement or contributory infringement. July 19, 1952, c. 950, § 1, 66 Stat. 811.

§ 281. Remedy for infringement of patent

A patentee shall have remedy by civil action for infringement of his patent. July 19, 1952, c. 950, § 1, 66 Stat. 812.

§ 283. Injunction

The several courts having jurisdicton of cases under this title may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable. July 19, 1952, c. 950, § 1, 66 Stat. 812.

§ 284. Damages

Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court.

When the damages are not found by a jury, the court shall assess them. In either event the court may increase the damages up to three times the amount found or assessed.

The court may receive expert testimony as an aid to the determination of damages or of what royalty would be reasonable under the circumstances. July 19, 1952, c. 950, § 1, 66 Stat. 813.

§ 285. Attorney fees

The court in exceptional cases may award reasonable attorney fees to the prevailing party. July 19, 1952, c. 950, § 1, 66 Stat. 813.

(United States Code, Title 28—Judiciary and Judicial Procedure)

§ 1498. Patent and copyright cases

(a) Whenever an invention described in and covered by a patent of the United States is used or manufactured by or for the United States without license of the owner thereof or lawful right to use or manufacture the same, the owner's remedy shall be by action against the United States in the Court of Claims for the recovery of his reasonable and entire compensation for such use and manufacture.

For the purposes of this section, the use or manufacture of an invention described in and covered by a patent of the United States by a contractor, a subcontractor, or any person, firm, or corporation for the Government and with the authorization or consent of the Government, shall be construed as use or manufacture for the United States.

The court shall not award compensation under this section if the claim is based on the use or manufacture by or for the United States of any article owned, leased, used by, or in the possession of the United States prior to July 1, 1918.

International Convention

Text of the International Convention as amended at Stockholm on July 14, 1967.

Official English Text

ARTICLE 2

(1) Nationals of any country of the Union shall, as regards the protection of industrial property, enjoy in all the other countries of the Union the advantages that their respective laws now grant, or may hereafter grant, to nationals; all without prejudice to the rights specially pro-

vided for by this Convention. Consequently, they shall have the same protection as the latter, and the same legal remedy against any infringement of their rights, provided that the conditions and formalities imposed upon nationals are complied with.

(2) However, no requirement as to domicile or establishment in the country where protection is claimed may be imposed upon nationals of countries of the Union for the enjoyment of any industrial property rights.

(3) The provisions of the laws of each of the countries of the Union relating to judicial and administrative procedure and to jurisdiction, and to the designation of an address for service or the appointment of an agent, which may be required by the laws on industrial property are expressly reserved.

ARTICLE 5

A. (1) Importation by the patentee into the country where the patent has been granted of articles manufactured in any of the countries of the Union shall not entail forfeiture of the patent.

(2) Each country of the Union shall have the right to take legislative measures providing for the grant of compulsory licenses to prevent the abuses which might result from the exercise of the exclusive rights conferred by the patent, for example, failure to work.

(3) Forfeiture of the patent shall not be provided for except in cases where the grant of compulsory licenses would not have been sufficient to prevent the said abuses. No proceedings for the forfeiture or revocation of a patent may be instituted before the expiration of two years from the grant of the first compulsory license.

(4) A compulsory license may not be applied for on the ground of failure to work or insufficient working before the

expiration of a period of four years from the date of filing of the patent application or three years from the date of the grant of the patent, whichever period expires last; it shall be refused if the patentee justifies his inaction by legitimate reasons. Such a compulsory license shall be non-exclusive and shall not be transferable, even in the form of the grant of a sub-license, except with that part of the enterprise or goodwill which exploits such license.

(5) The foregoing provisions shall be applicable, mutatis mutandis, to utility models.

APPENDIX F

Excerpts From May 16, 1979 Opinion of U.S. Court of Claims

The following excerpts from the May 16, 1979 Opinion of the Court establish recognition by the Court of Leesona's contribution; the desire of Leesona to maintain its exclusive manufacturing right, and the loss to Leesona caused by the Government's destroying Leesona's exclusivity:

Pages 2 & 3:

"In the liability trial, Trial Judge Cooper determined, and we agreed, that the three infringed patents were of substantial importance to the success of the BB-626/U battery, making them lighter, capable of handling more power and at higher power levels, and greatly reducing recharging time."

Page 3:

"The company's research was focused on the military potential of such a battery and the patents were considered an important contribution to Leesona-Moos, and to Leesona's diversification program."

Page 3:

"In 1966, Leesona manufactured and tested batteries under a contract with the government for 22 metal-air batteries, 10 of which were to be mechanically reconstructible. The test performance of the '626 batteries was highly favorable, compared to the standard '451 batteries. Due to the outstanding performance of the '626 batteries, the Marine Corps decided to replace all the BB-451/U's with BB-626/U's."

Page 4:

"Leesona committed over $3 million of its funds to establish full-scale production facilities for the batteries. Given the success of the '626 batteries, Leesona assumed that the patents would be of great assistance in enabling it to maintain a highly competitive position in the battery field."

Page 4:

"To ensure such a position, Leesona was unwilling to grant any other company a license to manufacture batteries within the United States, although agreements with other corporations do not prohibit the sale within the United States of batteries manufactured outside the United States."

Page 16:

"It is true that the procurement procedure utilized in this case did harm Leesona."

Page 22:

"Plaintiff's injury here far exceeded even its own estimate of a reasonable royalty, and as pointed out above, the tort theory under which such injury might be compensable was not applicable in a § 1498 taking case."

Pages 26 & 27:

"But the battery's very uniqueness lies in the fact that it uses a device like replacing anodes to be recharged, instead of relying on a cumbersome recharging device. In fact, the separability of the anodes is the key to the battery's value."

Page 27:

"Most importantly, however, Leesona's patents were needed to manufacture the battery cell, and without this battery no anodes, cathodes, or covers would be required."

Page 29:

"Compare Leesona, which had intended to use the Leesona Moos Labs and its patents as a springboard for entry into the battery manufacturing business."

Page 29:

"Until Leesona had lost its exclusive right to manufacture batteries in the United States because of the government's infringement, ..."

Page 29:

"Leesona did not wish to give up its right to exclusive domestic manufacturing; . . . ."

Page 29:

"Our focus on the special value to Leesona of the patents taken by the government is justified under the law of eminent domain. The just compensation to which an owner is entitled when his property is taken by eminent domain is regarded in law from the point of view of the owner of the right and not from that of the taker."

Page 30:

"The special value of the exclusive manufacturing rights, their importance to the diversification plans of Leesona, made their worth much greater . . . ."

Page 30:

"Therefore, in light of the unique value of plaintiff's patents to its business, ..."

Page 32:

"However, as we have said, plaintiff valued the patents largely for their capability to channel the flow of manufacturing orders to Leesona, . . ."

* * * * * *

APPENDIX G

Letter From Acting Secretary of the Navy to Senator Tillman Dated April 20, 1918

"Navy Department, Washington, April 20, 1918.

"My Dear Senator Tillman: This department is confronted with a difficult situation as the result of a recent decision by the Supreme Court affecting the government's rights as to the manufacture and use of patented inventions, and it seems necessary that amendment be made of the Act of June 25, 1910, entitled 'An act to provide additional protection for the owners of patents of the United States, and for other purposes.' The case in which the court's decision was rendered is that of William Cramp & Son's Ship & Engine Building Co., Petitioner, v. International Curtis Marine Turbine Co. and Curtis Marine Turbine Co. of the United States, and the decision is, in effect, so far as it is of importance here, that a contractor for the manufacture of a patented article for the government is not exempt, unless he is only a contributory infringer, from injunction and other interferences through litigation by the patentee.

"A prior decision of the Supreme Court, that in the case of Crozier v. Krupp, had been interpreted as having the opposite meaning, and the department was able up to the time of the later decision, on March 4 last, to proceed satisfactorily with the procuring of such patented articles as it needed, leaving the matter of compensation to patentees for adjustment by direct agreement, or, if necessary, by resort to the Court of Claims under the above-mentioned act of 1910. Now, however, manufacturers are exposed to expensive litigation, involving the possibilities of prohibitive injunction payment of royalties, rendering of accounts, and payment of puntive damages, and they are reluctant to take contracts that may bring such severe consequences. The

situation promised serious disadvantage to the public interests, and in order that vital activities of this department may not be restricted unduly at this time, and also with a view of enabling dissatisfied patentees to obtain just and adequate compensation in all cases conformably to the declared purpose of said act, I have the honor to request that the act be amended by the insertion of a proper provision therefor in the pending naval appropriation bill.

"The changes desired are shown in the accompanying draft of provision, which would, if inserted in the naval bill, accomplish the desired result satisfactorily to the department, and favorable consideration of this matter is urgently requested.

"Sincerely yours,

Franklin D. Roosevelt, Acting Secretary.

"Hon. Benjamin R. Tillman,

"Chairman Committee on Naval Affairs, United States Senate."

No. 79-523

In the Supreme Court of the United States

OCTOBER TERM, 1979

LEESONA CORPORATION, PETITIONER

v.

UNITED STATES OF AMERICA

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF CLAIMS

BRIEF FOR THE UNITED STATES IN OPPOSITION

WADE H. MCCREE, JR.
Solicitor General

ALICE DANIEL
Acting Assistant Attorney General

LEONARD SCHAITMAN
THOMAS J. BYRNES
JOSEPH B. SCOTT
JOHN FARGO
Attorneys
Department of Justice
Washington, D.C. 20530

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CITATIONS

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BRIEF FOR THE UNITED STATES IN OPPOSITION

OPINIONS BELOW

The opinion of the trial judge on accounting is reported at 198 U.S.P.Q. 4 (Pet. App. 1a-46a). The en banc opinion of the Court of Claims on accounting is reported at 599 F. 2d 958 and 202 U.S.P.Q. 424 (Pet. App. 47a-93a). The opinion of the trial judge on the liability phase is reported at 185 U.S.P.Q. 156 and, along with the Court of Claims affirmance, at 530 F. 2d 896 (Pet. App. 95a-120a). The opinion of the Court of Claims on the issue of attorneys' fees is reported at 213 Ct. Cl. 722 and 197 U.S.P.Q. 737 (Pet. App. 121a-124a).

JURISDICTION

The judgment of the Court of Claims was entered on May 16, 1979, and a petition for rehearing was denied

on June 29, 1979. The petition for a writ of certiorari was filed on September 27, 1979. The jurisdiction of this Court is invoked under 28 U.S.C. 1255(1).

QUESTION PRESENTED

Whether the Court of Claims correctly determined the amount of damages that petitioner is entitled to recover as a result of patent infringement by the United States.

STATEMENT

This petition concerns the accounting phase of a suit under 28 U.S.C. 1498(a) to determine the compensation for the unauthorized use by the United States of the inventions covered by three patents owned by petitioner. Petitioner's complaint claimed the unauthorized use by or for the United States of seven patents. After a lengthy liability trial, three of the seven patents were held valid and infringed, two of the patents were held invalid, one was held not infringed and one was found to be licensed to the United States government (Pet. App. 95a). The subject matter of the infringed patents relates to fuel cells and batteries (electrochemical devices for the generation of electrical energy by chemical processes).

The evidence at trial showed that in the 1950's and 1960's, the United States, through both civilian and military agencies, undertook a program for the development and exploitation of fuel cells. Petitioner was a government contractor in this government-sponsored fuel cell research program. Its first contract for the construction of a battery came in 1965, when it contracted with the Air Force to develop a "high-rate missile" battery. Subsequently, the Army negotiated a sole-source development contract in March 1966 with petitioner for a battery to meet an urgent Marine Corps' requirement (Def. Exh. 279). Toward the end of the

development program, the Marine Corps conducted tests on a number of batteries, including petitioner's battery that had been built under contract. Thereafter, the Marine Corps selected petitioner's design for further testing and possible procurement (Pet. App. 63a).

The Marine Corps later decided to procure the batteries developed under contract by petitioner for use in the Vietnam conflict. The Marine Corps first contemplated issuing a sole-source contract to petitioner, but later determined that the request for procurement should be placed on competitive bidding. After consideration of several bids, including petitioner's, the contract was awarded to Eagle-Picher Industries, Inc. (Pet. App. 63a-64a). The Court of Claims held that in these circumstances the United States had infringed petitioner's valid patents (*id.* at 51a-52a).

After petitioner had established the government's infringement of the patents in the liability phase of the action (Pet. App. 95a), the trial judge awarded damages based on his view of the scope of 28 U.S.C. 1498(a), which in the case of infringement by the United States provides that "the [patent] owner's remedy shall be by action against the United States in the Court of Claims for the recovery of his reasonable and entire compensation for such use and manufacture." The trial judge took the position that, except for injunctive relief, 28 U.S.C. 1498 was intended to duplicate the remedies for private infringement found in 35 U.S.C. 284 *et seq.* (Pet. App. 53a). He further determined that this was the kind of extraordinary case in which the persons injured by the government's infringement could obtain treble damages and attorney's fees under Section 1498, just as private parties may obtain them under 35 U.S.C. 284 and 285 (Pet. App. 53a). Accordingly, the trial judge computed

damages and determined that petitioner was entitled to judgment in the amount of $3,534,753.52, which included attorneys' fees of $100,000 and delay compensation for the period from November 6, 1969, to December 31, 1977. The trial judge also ordered the payment of further delay compensation at the rate of $470.51 per day from January 1, 1978, until satisfaction of the judgment (Pet. App. 47a).

The en banc Court of Claims concluded that "the trial judge's award is largely excessive because of his erroneous assumption that he was adjudicating a tort claim for patent infringement under various provisions of Title 35 of the Code" (Pet. App. 47a-48a). The court further explained that "[t]he fundamental error of the trial judge is that he has taken 28 U.S.C. §1498, which is essentially an Act to authorize the eminent domain taking of a patent license, and to provide just compensation for the patentee, and he has converted it to a consent to suit on a tort theory, and the treatment of the United States as a tort-feasor" (*id.* at 55a). The Court of Claims stressed that it "has traditionally searched the law of eminent domain for legal precedents and principles to apply in determining the 'reasonable and entire compensation' to be granted in a valid infringement action against the government" (*id.* at 57a), noting that the trial court improperly used the language of Section 1498 "to justify the award of double damages, profits, savings to the government, and attorneys' fees in addition to a reasonable royalty he deemed due [petitioner] for infringement" (*ibid.*). The Court of Claims concluded that, in using the phrase "entire" to describe the compensation due the infringed patentee in Section 1498, Congress merely meant "to underscore the exclusivity of the remedy of suit in the Court of Claims" (*id.* at 58a); it did not intend to give patentees the same rights against the government that they have against private infringers under 35 U.S.C. 284 *et seq.*

After concluding that the trial judge had proceeded from an erroneous premise in calculating the amount of the award, the Court of Claims reviewed the specific elements of the award. It determined that the trial judge's doubling of damages due to the government's putative "bad faith" was meant to punish "the U.S. Government for its mishandled procurement procedures * * * [rather than being based] on any estimate of [petitioner's] loss" (Pet. App. 62a). Because "[t]he proper measure in eminent domain is what the owner has lost" (*ibid.*), the court accordingly rejected this element of the damages award, noting that "[t]he lesson [to the government] might be salutary, but it is not one the United States has consented to" (*ibid.*). The court also pointed out that, in any event, multiplying damages is appropriate, even where private parties are involved, only upon "a clear showing of willful and deliberate infringement" (*ibid.*). Such a showing could not be made here because "the government had the legal right to take the patents subject to its obligation to pay just compensation for them" (*id.* at 63a). For the same reasons, the Court of Claims declined "to grant the award of attorneys' fees * * *, again emphasizing that this is a punitive award not necessary to provide just compensation for the taking of [petitioner's] patent rights by the U.S. Government" (*id.* at 64a).

The court also rejected the "lost profits" component of the overall award, explaining that such a measure can be used as an alternative to computing just compensation only where the preferred "reasonable royalty" method cannot be applied. The trial judge, however, "awarded lost profits not as an *alternative* to the royalty but *in addition* to it," which the court found to be an improper

"double-counting" (Pet. App. 65a). Similarly, the court disagreed with the additional award made to petitioner based on savings to the government (the estimated savings were based on the difference between petitioner's bid and that of Eagle-Picher) on the ground that it also amounted to double counting (Pet. App. 66a). The court noted that savings to the government could in some circumstances be used in the calculation of a reasonable royalty but could not stand as a separate and additional element in the overall award (*ibid.*).

Turning to the issue of a reasonable royalty, the court first observed that "[e]ven excluding the lost profits, double damages and savings to the government * * * the disparity between [the government's] suggested royalty figure—$12,349.46—and the amount urged by [petitioner] and the Trial Judge—$358,883.08—is still wide" (Pet. App. 68a). It then proceeded to an independent review of the royalty issue and derived a "compensation base" of $2,667,122.81 (*id.* at 76a). In determining the reasonable royalty yielded from this base, the court agreed with the trial judge "in both his methodology and with his ultimate conclusion as to the reasonable royalty [*i.e.*, percentage of the compensation base] due [petitioner] in this case" (*ibid.*). Finding, as the trial judge had, that "a royalty of 10 percent is justified in this case" (*id.* at 78a), the court derived a royalty award of $266,712.28. The court conceded that this figure "may quite possibly be less than [petitioner] could be shown to be entitled to" (*id.* at 81a-82a), but it explained the difficulties of the matter as follows (*id.* at 82a):

> Unhappily, the lengthy record in this accounting phase of the case is dominated by plaintiff's and the trial judge's pursuit of a large award, attempting to make good the injury to business on a tort theory, wholly inadmissible in eminent domain. To award plaintiff even as much as we do, it has been necessary to search the record for evidentiary clues as to the fair market value of the license taken, which have found their way there without much help from the plaintiff. Any amount properly awardable, with the missing facts fully developed, would be but a small fraction of what is claimed. Here, as in our renegotiation cases, the party having the burden of proof must suffer if a scantiness of record fails to support a fully informed and reasoned determination.

ARGUMENT

Petitioner overstates both the holding of the Court of Claims in this case and the holdings of this Court in other cases. The Court of Claims here simply held that "reasonable and entire compensation," the equivalent of "just compensation" under the Fifth Amendment, consists of a reasonable royalty plus delay compensation—no more, no less. A reasonable royalty is the fair market value of a license in the patents taken. In awarding the fair market value of the property interest taken plus delay compensation, the Court of Claims followed the normal rule in awarding "just compensation."

By the same token, the Court of Claims' holding that punitive damages cannot be awarded under 28 U.S.C. 1498(a) follows the established rule that unless Congress has *expressly* provided otherwise, punitive damages cannot be awarded against the United States. *Missouri Pacific R.R.* v. *Ault*, 256 U.S. 554, 564-565 (1921). Similarly, "just compensation" does not include attorneys' fees. *Dohany* v. *Rogers*, 281 U.S. 362, 368 (1930). Furthermore, as the Court of Claims recognized (Pet. App. 65a-68a), it is not permissible to cumulate alternative methods of arriving at an award, such as lost profits, reasonable royalty and cost savings.

The Court of Claims' opinion demonstrates that the issues raised by petitioner were carefully considered and rejected. Indeed, not one member of the en banc court agreed with petitioner's arguments. The only argument not considered below is that regarding the Stockholm Convention (Pet. 32-33), an argument that petitioner never advanced in the Court of Claims.

Finally, petitioner's theory, based as it is on derivative liability under Title 35, is not presented by this case in view of the Court of Claims' holding that it would have reversed the trial judge's award of punitive damages even if this case were governed by Title 35 (Pet. App. 62a). The court found that the record failed to support the trial judge's finding of "willful and deliberate infringement" (see *id.* at 35a). Thus, even if this Court were to agree with petitioner's view of the law, there still would be no basis on which to support the exorbitant award granted by the trial judge.

1. Petitioner contends (Pet. 26) that the alleged failure to award a reasonable royalty plus delay compensation in this case renders 28 U.S.C. 1498(a) unconstitutional. The Constitution, however, does not grant a right to receive a patent or confer exclusivity on the patent holder. Rather Article I, Section 8 empowers Congress to confer patents on inventors. Congress is free to establish whatever patent rights and remedies it believes are necessary and proper to further this power. *Wheaton* v. *Peters*, 33 U.S. (8 Pet.) 591, 663-664 (1834). While this Court in *James* v. *Campbell*, 104 U.S. 356, 358 (1881), stated in passing that the United States could not use a patented device without payment of "just compensation," it did not equate "just compensation" for use of a patent with the damages recoverable by a private party for the tort of patent infringement (see Pet. App. 56a).

The eminent-domain foundation underlying Section 1498(a) has been recognized by this Court. In *Crozier* v. *Krupp*, 224 U.S. 290, 305 (1912), the Court explicitly determined that the Act of June 25, 1910, ch. 423, 36 Stat. 851, was founded on eminent domain principles rather than in tort. In addition, the Court's citations to eminent domain cases in its opinion in *Waite* v. *United States*, 282 U.S. 508 (1931), is a further recognition of the eminent domain character underlying Section 1498(a).

Petitioner's reliance on *Cramp & Sons* v. *International Curtis Marine Turbine Co.*, 246 U.S. 28 (1918), is misplaced. All that the Court held in *Cramp* was that the Act of 1910 did not protect government contractors from separate suit. The Court was reluctant to find that Congress intended contractors to benefit from the government's eminent domain power. *Id.* at 45. In 1918, Congress nullified this decision by providing that a suit against the United States under Section 1498(a) is the exclusive remedy for infringements by government contractors. Act of July 1, 1918, ch. 114, 40 Stat. 705.[1]

Petitioner's argument that Section 1498(a) would be unconstitutional if it did not allow an award of punitive damages also was properly rejected by the Court of Claims (see Pet. App. 58a-61a). The only requirement imposed by the Constitution is that the compensation be "just." An award of a reasonable royalty—the fair

[1]Petitioner's reference to authorizing a "private citizen" to infringe is misleading. A government contractor acts as an agent of the government and not as a "private citizen" to the extent authority has been granted. In *Yearsley* v. *W.A. Ross Const. Co.*, 309 U.S. 18, 21-22 (1940), this Court recognized that the eminent-domain power of the government may extend to the acts of its contractors. Moreover, in *Yearsley*, this Court recognized that the Act of 1918 similarly limited a patentee's recovery to that of "just compensation" from the government. *Id.* at 22, citing *Crozier* v. *Krupp*, *supra*.

market value of the patent license taken—plus delay compensation is the exact equivalent of the property taken and fully constitutes "just compensation." The fact that, prior to the Act of 1918, a patentee might have been able to recover more than "just compensation" in a tort suit against a contractor is immaterial. It is well settled that remedies can be modified, limiting liability, since there is no vested property right in a prospective cause of action. *Silver* v. *Silver*, 280 U.S. 117, 122 (1929). See also *Carr* v. *United States*, 422 F. 2d 1007, 1010-1011 (4th Cir. 1970).

This Court's decision in *Richmond Screw Anchor Co.* v. *United States*, 275 U.S. 331 (1928), also fails to support petitioner's arguments. In considering the Act of 1918, the Court nowhere addressed the issue of whether punitive damages or duplicative awards could be granted. Rather, the problem recognized by the Court was that if *both* the Anti-Assignment Act, 31 U.S.C. (1940 ed.) 203, and the Act of 1918 applied, the patentee would recover *nothing* for post-1918 infringement. Since such a construction raised the spectre of an appropriation of property without *any* compensation, the Court held that Congress could not have intended the Anti-Assignment Act to apply in that case. It is in that context that the Court characterized the Act of 1918 as securing the exact equivalent of the remedy it replaced, an action against a contractor. However, that is a far cry from holding that full tort damages, including punitive damages and attorneys' fees, are awardable under Section 1498(a).

2. The right of exclusivity conferred upon a patentee by 35 U.S.C. 154 simply gives a patent the attributes of property. This "exclusivity" is subject to the government's eminent-domain power to take a patent license just as a landowner's exclusivity is subject to the government's power to take an easement. The only constitutional requirement is that "just compensation" be paid. 28 U.S.C. 1498(a) authorizes such an eminent-domain taking and requires the payment of "just compensation." It does not conflict with 35 U.S.C. 154, for without the right of "exclusivity" no property would be taken and no compensation would be due under Section 1498(a).

The claim of a conflict between 35 U.S.C. 154 and 28 U.S.C. 1498(a) is further undermined by the Court of Claims' statement that "[e]ven if this [were] a suit between private parties subject to the remedies of Title 35, we would not affirm an award of multiplied damages in this case" (Pet. App. 62a). The court determined that petitioner was not entitled to increased damages under 35 U.S.C. 284. Thus, even if petitioner's legal theory were correct, it would be entitled to no more than the Court of Claims awarded.

3. Since, as stated above, the award of a reasonable royalty plus delay compensation is "just compensation" for the taking of a patent license, the Court of Claims' decision does not conflict with the Fifth Amendment.[2] The Fifth Amendment does not require that compensation be paid at the time of taking, and hence the fact that suit must be brought in the Court of Claims to recover damages causes no constitutional problem. *Hurley* v. *Kincaid*, 285 U.S. 95 (1932).

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[2]The license considered by the Court of Claims in formulating its award includes the right to *manufacture* and use the batteries (see Pet. App. 77a-78a). Thus, it provides adequate compensation for the acts of both the government and its contractor.

The Comptroller General's decision that procurement contracts for patented articles are to be awarded to the lowest responsible bidder without regard to whether the bidder is licensed under any patents recognizes that the Court of Claims, and not the General Accounting Office, is the exclusive forum for determining whether the government has used a valid patent without authorization.[3] To hold otherwise would delay the performance of procurement contracts until after a determination of the patent owner's rights had been made. Moreover, the number of patents held invalid after litigation suggests that lengthy proceedings would be necessary to ensure that exceptions to competitive bidding procedures would not be made on the basis of invalid patents.

Finally, the conspicuous absence of any exception to competitive bidding in the Armed Services Procurement Act, 10 U.S.C. 2301 *et seq.*, for patented goods indicates that Congress views the mandate for competitive bidding to be of overriding importance. See *Paul* v. *United States*, 371 U.S. 245 (1963). Indeed, in 1966 Congress declined to pass a proposed amendment to 10 U.S.C. 2304(a) that would have provided such an exception where an agency head determined that a valid claim for patent infringement would result from purchase from an unauthorized source. 112 Cong. Rec. 10272 (1966). In Congress' view, a party claiming patent infringement has an adequate remedy in a suit for "reasonable and entire compensation" in the Court of Claims.

[3]An exception exists in the case of agencies that are authorized by statute to settle administrative claims for patent infringement. See, *e.g.*, 10 U.S.C. 2386.

4. The argument that the Court of Claims decision conflicts with international treaties was never raised before the Court of Claims and therefore should not now be considered. In any event, Article 2 of the Stockholm Convention merely requires that foreign patentees have the same rights to sue for infringement as nationals (see Pet. App. 128a-129a). The Court of Claims has never held that a foreign patentee would recover less or be otherwise discriminated against in an action under 28 U.S.C. 1498(a).

Article 5A of the Stockholm Convention (Pet. App. 129a-130a) is also immaterial. It restricts the rights of member nations to impose sanctions through forfeiture or granting of a compulsory license when the patentee "abuses" his monopoly rights by failing to work, or by suppressing, the patented invention. However, under United States patent law, the patentee is free to do nothing with his patented invention without incurring sanctions for non-use. *Continental Paper Bag Co.* v. *Eastern Paper Bag Co.*, 210 U.S. 405, 429-430 (1908). Thus, Article 5A has no application to United States law.

CONCLUSION

The petition for a writ of certiorari should be denied.

Respectfully submitted.

WADE H. MCCREE, JR.
Solicitor General

ALICE DANIEL
Acting Assistant Attorney General

LEONARD SCHAITMAN
THOMAS J. BYRNES
JOSEPH B. SCOTT
JOHN FARGO
Attorneys

NOVEMBER 1979

DOJ-1979-11